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Towered Cities—III

Carcassonne and Avignon

Photographs by E. H. Lowber

IN THESE informal commentaries and memories concerned with Spanish towns, how, it may be asked, should Carcassonne and Avignon be taken into account? Two reasons might be reckoned in reply: first, that the south of France and the Spanish March are all of a piece, that on both sides of the Pyrenees and all around the Gulf of Lions, where the Visigothic kingdom was established, one race is found, one art, one speech, and very often in the Middle Ages one ruler; secondly, that the precise point at which our investigations are arrived, namely, the debt of the Limousin lands to Eastern builders, could be proved here neatly. The great families of Languedoc and Provence were established also in the East. But in truth all this west-Mediterranean building has already been cited in one article or another: one time a gate at Cagliari, again a gate at Avignon; and all this debt to Antioch and Tortosa, to Kala'at el Husn and Kala at Sahioun and Safita has been claimed and taken for granted, alike for castles and for fortified towns, and the matter may as well be now presented for consideration.

A short exposition will suffice to prove what is asserted, but the immortal memory of these cities, once evoked, cannot lightly be laid. At Carcassonne culminated in the twelfth century the brutal invasion from the north which was called the Albigensian crusade and which was a political and commercial scheme to wreck and ruin, in the south, a political and commercial rival of Paris; and from Carcassonne derived his lordship and seigneury Simon de Montfort. At Avignon in the fourteenth, Limousin popes reared gloriously the only mediæval palace which could bear comparison with the Alhambra, and adorned it with the help of Provençal workmen, and Italian and Catalan.

The fortifications of Carcassonne are perfect and intact; the larger and lesser towers that guard the angles and the intermediate curtain, the outer and the inner line of walls, the space between them that is called in French *les lices*, the lists, where knights were used to joust in peacetime and refugees to drive their cattle in raids or sieges. Here may be studied the perfect model of a walled city, hill-set; the heavy earthworks beyond the moat, the huge cylindrical towers that rise from it along the curtain, those of smaller girth that flank the portal, between which the portcullis and its counterpoises run in a gash and two grooves in the masonry; the steep little stair on the wall that a single man could defend, the long curved *rampe* of cobblestone that gave access to the city's inner gate, as just such another had led up to the citadel of Tiryns, three milleniums before the French king finished strengthening his captured mountain-hold.

The Romans and the Visigoths had walled and entrenched and scarped the abrupt hill, then in 1130 the Viscount Athon rebuilt with all the science learned by Crusaders in Palestine. The Armenians, says William of Tyre, had taught the Crusaders military engineering.

These mediæval Armenians were notable architects: when the Armenian Bedr-el-Gemaly, about 1074, was pacifying Egypt he fortified Cairo and built three gates in 1087, for which he summoned three brothers, Armenians and architects, from Edessa. There they had learned their craft in the great Byzantine tradition, for the Emperor Justinian had fortified that city, with the rest of the frontier. Procopius devotes a long section to describing the operations at Edessa, but the best account of a fortified city in the *Six Books of the Buildings of the Lord Justinian* is that of Dara, with which he opens. There was, as we make out, a triple series of defenses: two strong walls, each furnished with an interior *chemin de ronde*, and flanked by battlemented towers of three stories, which were vaulted,

and topped by a flagged platform behind the loop-holed rampart. Then an advanced wall covered the approaches, that had towers at the important points; lastly, a ditch, wide and deep, was flanked by a parapet of earth and masonry. The walls were thickened in the lower part, forming a steep glacis between tower and tower: they were thirty feet high, and at Dara carried, apparently, a double *chemin de ronde,* the lower supported on buttresses or corbelled out from the wall, the upper laid out on top of the wall and screened by battlements. At Constantina (which is now Vahr-an-Scheher, in southern Armenia), Procopius says the approaches to the towers were covered, which may mean that the passages ran under and through them, as at Lemsa in the north of Africa and at Almodovar del Rio near Cordova: in any case this ashlar building of passages, battlements and machicolations is unlike as possible to the fragile and inflammable wooden *hourdes* that topped the castles of England and the Isle of France. At Dara, we are further told, the space between the battlements was reduced to the dimensions of small loopholes, the old open towers were encased in others, rectangular, of great strength, and vaulted; finally, the river—which was both a necessity and a menace—was dammed a little higher up, with a series of graduated openings for flood-water, and brought down through the town in a channel of masonry. About ten or fifteen years ago the French General de Beylié, returning from Burmah to France overland, stopped at Dara to photograph a curious fortified dam that caught his eye. That it was of Justinian's building he seems not to have grasped. These operations of the great emperor were devised by Chryses of Alexandria and approved by his two chief architects, Isidor of Miletus and Anthemius of Tralles: but when the dome of S. Sophia collapsed a few years later it was rebuilt more scientifically by Tiridates the Armenian. On the other hand, when an architect was needed for the royal foundation of Akthamar, in the Lake of Van, early in the tenth century, King Gagik found one in Manuel the Roman, i. e., from Byzantium.

Byzantine building was based on the imperial Hellenistic art of Asia Minor, Syria and Alexandria, and it determined the later art of these regions, of Greece, of Armenia: the Arabs learned it. The Crusaders, settling in Syria, learned not only from brown workmen bought or borrowed but also from what they saw. For instance, Justinian's defenses of Antioch were repaired by the Arabs twice, once before and again after the Crusaders had held there a Principality, and are still to be studied among the mountain gorges.

The Crusaders brought home, or sent, their new science to their own lands on the Mediterranean, on the Rhone, the Garonne, the Dordogne, the Lot: the thirteenth-century walls of Cahors, like the archbishop's palace at Narbonne and the pope's palace at Avignon, both built entirely in the fourteenth century, show a system identical with that of Dara and Vahran-Scheher; one which was used likewise when the Syrian Karak of the Knights was built in the thirteenth century, though parts had fallen when Miss Lowthian Bell photographed it in 1906. In all these cases the parapets, with wide machicolations, overhang superbly, and are carried on mighty arches corbelled up from the curtain wall. The same feature may be observed at the castle of Coca,[1] which Arab master-masons built for a Fonseca in Castile in the fifteenth century, where the wavy lines of curved and jutting brickwork flicker and shiver, rose-colored and peach-colored, like sheets of living fire. It is quite possible that the lords of Provence and the masons of Avignon had learned their style from Arabs before the First Crusade, for we know that in the eighth century they went on record as hating the Saracen less than the Frank.

The civilization of what we call the south of France in the twelfth century was perhaps the most beautiful and perfect that western Europe had ever known, since the richest midsummer flowering in Sicily was to come a little later, and the earlier incomparable springtide outburst at Cordova was not quite European. At the courts of Poitou, of Toulouse, of Provence, in the castles of all that splendid southland that, like a single almond orchard in flower, burst into a flush of song, from the hills of Dauphiny to the Atlantic sands and almost from the Loire down to the Pyrenees and across them, life was an enchantment. There men's lives were suffused with spiritual passion, and love and death made love the deadlier and death the lovelier. There Jaufre Rudel and Bernard de Ventadour and Arnaud Daniel were to sing their lives out, wandering from land to land, from castle hall to castle bower, across the sun-smitten land; and the Countess of Die and the Count of Orange were to sing antiphonally to one another like two nightingales in the cypresses of a garden. There Peire Vidal loved the Loba of Penautier, who was the Lady of Carcassonne; and for love of her clad himself in wolfskins and was hunted by his own hounds over the hills like a wolf, that he should be Lobo if she were Loba; so she found him torn, half dead, and laughed softly, and kissed him, and healed him of all his wounds. There the splendid and mysterious beauty of Romanesque architecture, of S. Sernin at Toulouse and S. Trophime at Arles and Montmajour among the marshes and meres of a desolate country, arose like the walls of Thebes to the sound of music; there the magical and troubling loveliness of Romanesque sculpture, at S. Gilles and S. Etienne and La Daurade, was evoked like dreams made visible; and worn and ruinous and wasted though the statues may be, and carted away to museums like prisoners in tumbrils, their beauty haunts the heart.

[1] See JOURNAL of August and September, 1921.

CARCASSONNE—LES LICES

The communes, meanwhile, had attained to a life hardly less splendid: Marseilles, Montpelier, Toulouse, Avignon and their rivals were, many of them, free republics, enriched and softened by traffic with the gorgeous East. The formation of guilds and merchant companies brought about a change so rapid, says a historian, that it may justly be compared with our own industrial revolution. And when once relaxed the pressure upon the means of subsistence, men's thoughts turned suddenly toward all things high and holy: a spiritual reformation spread fast through all classes of society. The poor weaver found himself bidden to be a Friend of God; the Count of Toulouse carried about with him, through the waves of this troublesome world, the necessary provision for a like consecration when his time should come to die. It is not very easy to come at the truth where all the historians for seven centuries and more have been committed to concealing it, but with the help of good Charles Lea, the Quaker, the state of the case may be made out somewhat as follows:

Tolerance was general in the south, was a matter of course. The local clergy and, in some cases, the monastic bodies were very frequently found sympathetic to the new religious movement; while the bishops, appointed from Rome and often absentees, were furious. The nobles and townsfolk were sympathetic likewise. Strange as it may seem to those who know only northern history, it appears that the great lords of the south lived on good terms with both cities and clergy. The monasteries and parishes combined to withhold their revenues from the Roman prelates. Meanwhile, the existence of tolls at city gates and feudal frontiers was a great grievance to Italian and French merchants. The Mediterranean commerce was indispensable to northern trade, but the merchants were competitors: if they could by one stroke be put out of business and the business preserved, transferred to northern hands, the merchants of Paris and Champagne and the north shore would have done well by themselves. Rome and France indeed combined to extinguish Languedoc and Provence. The chief cause, however, of what was shamefully called a Crusade was the bitter jealousy of France, of the north, the same bitterness which culminated in a fixed determination at Paris to ruin the neighbors on the east, in the twentieth century. Lea, writing in 1908 with no contemporary parallels before his eyes, describes an Allied policy toward Raymond of Toulouse identical with the Allied policy toward the Republic at Berlin: the imposition of conditions which were impossible to fulfil, and then of further penalties even more hopeless. Prejudged and foredoomed, nothing but his destruction lay before Count Raymond. The Council of Lavaur and the Congress of Versailles had the same tactics and the same intentions.

Simon de Montfort was sincerely pious: more fundamentally pious perhaps than Paul Claudel or Paul Déroulède; but he was quite sure God wanted whatever he wanted. He had set out on a crusade, but turned back before Constantinople was reached; not having secured a princedom in Achaia or Thessaly, he felt God owed him one in Languedoc. He took the south. Béziers having been made a thorough lesson of frightfulness, he saw to it that Carcassonne should not be harmed materially: the women and children being all slaughtered or worse, and the men all killed in fighting or hunted through the hills. Not in amorous foolery but in a serious intent that had the lust of property to urge it on, he became a Viscount and took his title from Carcassonne.

At one point the pope sickened and would have checked what he had set in motion; William of Tudela relates, with the skill of a trained writer, the scene at the Lateran Council of 1215, when Innocent III tried to acknowledge "right and reason" at last, and the prelates said: "Lord, if you do that, we are ruined." Nor could he do it.

A hundred years later there was no pope in Rome, but popes, selected and imposed by the will of French kings, were installed in Avignon for seventy years. They were all, it is pleasant to reflect, of the Limousin land: Raymond de Goth, John XXII the Cahorsine, a Cistercian from the Pyrennean county of Foix, an abbot from S. Victor of Marseilles, three from Limoges, and lastly Peter of Luna, a great lord and a tameless spirit from the kingdom of Aragon. The southern civilization held its own even through conquest and occupation. God's judgment sometimes is apparent: it was manifest in the fourteenth century on the Rhone. The beautiful town, seated and secure upon her acropolis above the river, avenged the old wrongs. All the realm of Christendom brought tribute; the ancient wrongers laid offerings at her gilded feet and went home despoiled, with poison in their veins.

Through all that fourteenth century, from the election of Clement V in 1305 to the election of Benedict XIII in 1392, the palace of the popes was building. The accounts, kept carefully, have been preserved, and we know more about it than about any other monument of the Middle Age.

Every tourist recalls the lofty square-angled mass of stone that from below in the steep street overtowers the hilltop cathedral. The jutting battlements, the wide machicolations through which pale sky is visible to one who leans against the walls looking straight up, the huge and angular towers, all in this southern style of fortification so unlike the castles of the north, leave a memory ineffaceable. For centuries the princely pleasurehouse was degraded into barracks, reeking of disinfectants and encrusted with whitewash: some

Carcassonne—The Keep and the Postern Stairway

of the constituents of a standing army cut out the frescoed heads from chapel and closet and hall, to sell the neat painted disks of plaster to tourists, mostly English, as other constituents of a quartered army (aliens these, I believe) with their jack-knives picked out the mosaic from the cloister-columns at Monreale and had not even a price to show for the industry of idleness and ennui. After the military came the architects, the restorers, and what ignorance had happily neglected, learning and dexterity transformed. In the end, after a few centuries of weathering, the world will be grateful to the restorers. The echoing halls are vaster than the halls of dreams; the frescoed walls, reverently cleaned and left for deciphering, are piteous and fair; corridor and gallery, chamber and oratory and kitchen, show how nobly the first builders conceived them; towers and staircases and battlements are huger and more multitudinous than the imagination can compass today.

The bridge of Avignon was the greatest piece of engineering in the west since the Romans had passed that way and gone forever. It is broken now, but lasts on, immortally, in folksong. It had been planned and completed in 1188 before the storm broke; the builder was such another as Peter the Pilgrim, though he reached canonization, and his work has been rebuilt oftener. S. Bénézet, as he is called: S. Benet the Less, was a shepherd in the beginning and perhaps in the end a hermit, like that other architect of the twelfth century, S. Juan de Ortega; where he built bridge and bridge-chapel, the happy folk could dance.

The principal architect of the palace was John of Loubières, active 1342-1348: he was a carver by avocation, and I suppose a mason. The masons and carpenters engaged upon the work were mostly townmen of Avignon, and the same man worked on year after year, and brought his kindred. For instance, in 1337, Pierre Folcaud, with Jean Chapellier, was working under the architect Bernard Canello, on the chamber of Benedict XII: as late as 1357 this Folcaud was still employed. There is a Jean Folcaud also engaged in the following year, and Pierre and Bertaud Chapellier appear, the latter probably a son, for the entry falls twenty years after that contract with Canello. Master Bernard of Avignon is mentioned in 1339, probably Bernard Ganiac; and John English, a mason, lived and worked alongside him. These names, it must be admitted, are more tentative than one could wish, for the accounts which were kept in Latin and published in French furnish a sure disguise, usually, for men of other nations. At least two Catalans are mentioned by nationality, and in the further case of Pierre Dupuy, the master-painter engaged in decorating the earlier parts of the palace for some time before 1336, I am far from sure that he is not in reality another Catalan called, belike, Pere Despuig. The name is common on the east coast, at Valencia and Barcelona, in a region where painting was more advanced than in the central mountains of France. Most of the other painters, like the jewelers, are Italians, the latter chiefly Florentine or Sienese, the former from Arezzo and the papal city of Viterbo, as well as from the two great Tuscan republics.

Greatest among all the craftsmen was a certain Simon, the son of one Martin, who was called to decorate the palace and died there, leaving the unfinished work to nephews. Before he died, however, he had painted the portrait of a fair and virtuous dame of Avignon, at the request of a friend of his, a humanist and poet, who loved the golden-haired lady throughout a long life, and who rewarded him with two sonnets in thankfulness and praise. It was no small guerdon, for during the long centuries when the Primitives were ignored by an ungrateful world, and Siena was overlooked by dull or dissipated northern travelers on the grand tour, the sonnets of Petrarch were like a little lamp before the unforgotten image of Simone Martini.

GEORGIANA GODDARD KING.

THE WALLS OF CARCASSONNE

CARCASSONNE—THE GATE, PORTCULLIS RAISED

Eight Old Long Island Houses

Photographed by G. H. VAN ANDA

ON BLACK STUMP ROAD

FLATBUSH

CORONA

FLATBUSH

FLATBUSH—NECK ROAD

MILL ISLAND

FLATBUSH

FLATBUSH

PENN VALLEY, LOOKING NORTH, KANSAS CITY. GEORGE EDWARD KESSLER, *Landscape Architect*

In Memoriam

George Edward Kessler

On March nineteenth of the year 1923 there died in the city of Indianapolis, and in harness, as he would, I am sure, have wished, a great and modest man, known to over forty cities and communities of the West and Middle West as a city planner and landscape architect of extraordinary insight, vision, and practical ability, the friend and leader toward beauty of the lowly and the highly placed alike, a diplomat who won his points and kept his friends, a simple, genial, gentle man—George Edward Kessler.

Kansas City had, just before this great bereavement, in celebrating the thirtieth anniversary of the foundation of her park system, commemorated also the thirtieth anniversary of Mr. Kessler's connection with it. Parent and child, they grew up together. It is natural for artists to give the major credit to the creative genius and it is as the creating artist that we name him parent here. August R. Meyer, W. R. Nelson, and D. J. Haff were its godfathers, its sponsors in baptism. At a time when there was scarcely a paved street in Kansas City, when there were farms in the city limits, when one had to go down the road but a little way to find oneself in the open country, these prophets and seers of their city's future growth began to urge the creation of a park system "upon the farmers," as I have heard it phrased. Kessler saw the possibilities of the stream bottoms as parkways, with all their implications of easy gradients for roads and paths, and their adaptability as links in a chain of parks that would distribute breathing places throughout the future city; literally take the parks to the people rather than force the people to travel long distances to the parks. By quiet, patient, persistent effort, by proving step by step the truth of their prophecies, by wise methods of land acquisition, condemnation, and distribution of taxes, these men won to their proposals

THE CLIFF DRIVE IN SUMMER, KANSAS CITY. GEORGE EDWARD KESSLER, *Landscape Architect*

a constantly growing and strengthening support, until Kansas City feels today that her system of parks and boulevards is her very crown of beauty and so honors the artist who brought it into being that she asked that his body might lie forever in his old home, in some scene of beauty he had created for her.

The genius of the man for friendship, the modesty that never claimed his due, the self-sacrifice that gave all he had without thought of the material recompense, that tired him out in the service of two-score communities and brought him to the narrow house all too soon have been recorded in numerous tributes from all over the country. The East knew him by reputation chiefly, but that his profession recognized his eminence is evinced by the vice-presidency of the American Society of Landscape Architects he held at the time of his death. He was also one of the original members of the Commission of Fine Arts appointed by President Roosevelt.

He was so quiet and retiring that a list of the cities and projects for which he had acted or was acting as designer or consultant is startling. From Syracuse, New York, to the City of Mexico, from Longview in the State of Washington to Pensacola, Florida, and including cities of the rank of Indianapolis, Cincinnati, St. Louis, Denver, and Salt Lake—this is a mere indication of the range of influence of this apostle who carried his gospel of beauty even into the wilderness and the waste places of the earth.

I close this tribute to a lovable and loyal collaborator with an excerpt from the resolution of the Board of Park Commissioners of Kansas City by their President, Mr. William C. Scarritt, who knew him long and loved him well:

"We cannot estimate his loss. It will not do to say that others may not rise up and carry forward his work; but as our minds recur to his fidelity and the sincerity of his purpose and the elevation of his standards of civic needs, it will be our unanimous resolve to seize upon his faith in the future growth of Kansas City and to carry forward with the same exaltation of spirit that was his, dauntlessly, the wise work of city planning and municipal achievement, and to add our efforts to his work in promoting the glory of our beloved city."

H. VAN BUREN MAGONIGLE.

"Age d'Or"—Entrance Gates Between Grand Salon and Hall. The Autumn Salon, Paris. *From "L'Architecture"*
Henri Favier, *Architect;* Max Blondat, *Sculptor*

From Foreign Shores

On the Cluttered Docks

Competitions and the satisfactions and dissatisfactions which follow in their wake; town planning; tenements; municipal mansions for the middle class; railway stations; war monuments; much of the commonplace and conventional and very little of the imaginative in architecture, make up the mass of stuff heaped upon our dock for inspection and from which I am expected to select a cargo for this, the tenth, voyage of that frail craft, my "paper boat." Skyscrapers and machine-made cities (on paper only, thank goodness) were left on dock for future disposal last time when other more vital stuff had filled to capacity our restricted space in the hold. In fact some of our last cargo was cast overboard by the stevedores and, let us hope, for some good and sufficient reason.

Material and Immaterial

The material at hand is not so difficult of treatment. It is the immaterial, if such topics as the discussion of competitions, their weaknesses and possible virtues, and human scale in design—both of cities and buildings—can be called immaterial, which is difficult to manage. Undoubtedly the second topic, scale, has a spiritual bearing and in this sense only is immaterial; while competitions, in that they are always thrusting controversial elements to the fore, cannot be ranked with things immaterial; though equally they cannot be considered as having any spiritual quality; not, that is, in an architectural sense.

Our British brethren, the English especially, are having unpleasant experiences with competitions. They are unpleasant enough anyway for all except the winner and the results may later be unpleasant for him. The *Architects' Journal* seems to be the medium through which the spokesmen, pro and con, find voice; and communications in the November and December issues will bear comment. I shall not name names, but will consider generally the principles involved in certain points in controversy. First a point of irritation lies in the fact that a single assessor so frequently passes on the merits of the designs submitted. This fact should arouse no criticism from one who had entered a competition after the announcement that there was to be but a single assessor, together with his name. Then it is too late, and too unsportsmanlike for a loser to enter objections. But objection is being made by many outside of competitors to the system which creates the single assessor, or judge, as we call him, on the ground that no single mind can fairly analyze and compare the numerous plans, and that fairness lay rather in the decisions of a majority of three or more assessors, who would constitute what we call a jury. In spite of the profound respect which I (naturally) hold for my own opinions and

judgment, yet I do not feel that I could undertake the task of being sole judge in an important competition. Perhaps if I were a less timid creature I should feel otherwise. But I am certain, from my experience of single advisers and juries, that in the decisions of the latter lies the nearest approach to fairness. A jury can be more impersonal—more hard-hearted or no-hearted—and is apt to be. An assessor who has drawn up the programme and conditions is placed in an unenviable position when a set of plans submitted in competition, though otherwise ministering to the best interests of the owner, that is, presenting the best solution of the problem, violates fixed conditions of the contract; that is, the programme, which constitutes a contract between the owner and one who enters the competition. A jury has been known to throw out such a set of drawings on the ground that its acceptance would be not only unfair to, but would be a breach of contract with, the competitors who played "straight." In the case being aired in the columns of the *Architects' Journal,* the assessor is charged with accepting and premiating the offending design. I have known, nearer home, a professional adviser, acting as sole judge, to do what the English assessor is charged with doing. As one of the defeated competitors I was "sore" and it was only my perverted sense of decency which restrained me from going into court and having the award set aside and a new and fair competition reinstated. Any losing competitor has that right under the law—if he chooses to exercise it. But we poor simple architects are generally too "good natured"; and that is why we are apt to go wrong as judges. By the way, a certain assessor who sought to answer his critics was ill-advised in his suggestion that theirs was a case for Institute discipline. His, rather, was the case if he really premiated a design which did not conform to "fixed" or mandatory conditions of the programme. In most of the recent English competitions the results seem to me most disheartening. The designs are commonplace to a degree; as one of the losing English competitors remarks, "If the winning design was the best offered, then the offerings must have been poor indeed," or words to that effect. The designs appear to have been drawn by professors of architectural design or by second year students under their direction. There is no heart, no imagination, no feeling, no human quality inhering in any of the designs. In one or two of the competitions the winning designs are less stilted and forced and academically conceived than in the others, but none is overimbued with the human quality.

Human Scale

Mr. A. Trystan Edwards deals, in the September and October numbers of *Architecture,* London, with the problem of the human unit in architecture, especially as applied to the design of shop fronts. The key to the discussion lies in the following as to old Regent Street:

"The scale was perfect, for while the parts were small enough to keep us in countenance, the composition of the street as a whole could not but impress us by its extraordinary dignity. It was the kind of dignity such as only very great men have, a wealth of character which does not inspire awe but puts the humblest person at his ease."

That first sentence, modified, might well hang as an illuminated motto over every architectural designer's table: "The scale was perfect, for while the parts were small, the whole could not but impress by its extraordinary dignity." Had that sentiment animated our competitors and had our designers of street fronts and skyscrapers and even dwelling houses followed the implications of that text our cities would be more agreeable places in which to live; less nerve-racking and overpowering to the mere humans who are compelled to walk the streets or live

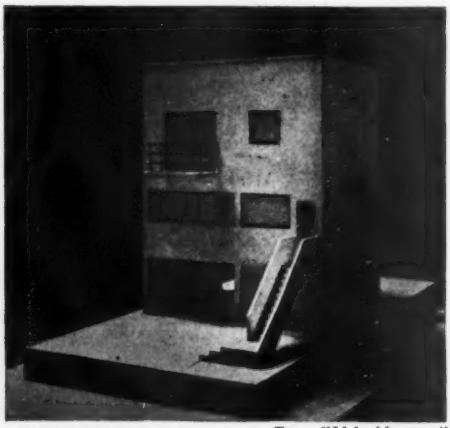
BUSINESS PREMISES, FRERE ROAD, BOMBAY
BHEDWAR & BHEDWAR, *Architects*

From "The Architects' Journal"

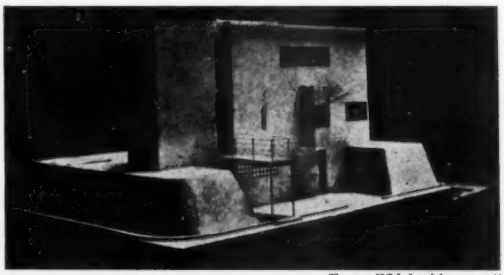
in the houses or to spend hours in the shops, banks, theatres, or clubrooms. As Mr. Edwards says further; "The aristocratic and democratic ideals, alike forever necessary to mankind, came simultaneously to architectural fulfillment in Regent Street; and commerce had far more honor from this circumstance than it is likely to gain by its present attempt to repudiate both these ideals." We visualize here pretty definitely the meaning of the architecturally much used and abused terms "aristocracy" and "democracy." Democracy means the pulling together in harmony of the various individual elements, whether they be the features of the building or the buildings along the street. Aristocracy means the refinement of the elements, whether they be the features of the building or the buildings themselves. And more than this, there is implied a human scale, that is, a scale which does not overpower the human being who enters, lives in or gazes upon the buildings, neither depresses nor overawes him when he gazes upon the individual features or upon the whole building. We are getting away from that human scale in all our grandiloquent design. We conceive that we are giving expression to the aristocratic spirit when we design in the Grand Roman Manner with massive columns, exaggerated entablatures and mob-devouring arches, whereas we are in reality displaying our love of pomp and will to power which are not expressive of a refined and aristocratic feeling but which are indicative of a brutish and unrestrained nature.

As to the Ornate

Nor does the present tendency toward overornamentation in any way ameliorate the conditions created by a non-aristocratic and non-democratic expression of a self lost in brutal immensity. Real refinement does not overornament. False pride almost alone is accountable for such manifestation. There is hardly a modern bank or theatre or hotel in which a person of refinement can feel at home. There is hardly a proscenium arch in a modern theatre which does not overpower stage, picture, and audience alike with its Roman orders of extreme scale, which are not refined, but which rather are vulgarized by the tawdry and commonplace ornament so lavishly applied. Everywhere nowadays there must be unco-ordinated movement, must be scintillation, must be jazz, even in decoration. Repose and restful rhythm no longer seem to appeal; or if they answer to a call within us, that call is silenced by the strident voices of those who do not know when to stop—nor would seem to care to stop.



A Ribot Law House
Le Corbusier, *Architect*
From "L'Architecture"



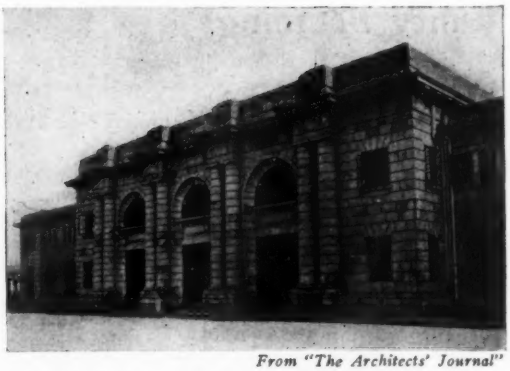
A Private House
Le Corbusier, *Architect*
From "L'Architecture"

Paper Cities

It would seem that modern mankind had enough to suffer in brutalized scale and slathered ornament. But, no, it must be flattened out with the mechanically disposed planes and stages and box-like buildings of the ultra-modern city planners. Fortunately for us humans who still possess sensitiveness and feeling, these cities will never develop beyond the paper stage. Cities will not grow that way any more than mankind will develop into a breed of Robots. Better say that when mankind develops into Robots these mechanistic, cubistic, ultra-modernistic cities will materialize. Cities grow just as men grow. Certain habits appear, are altered and cast aside; certain tendencies caused by physical environment and by spiritual environment have to be modified and the environment itself changed. The efficient city like the efficient man must be a growth out of humanized conditions; and in this growth it gets sufficiently mechanized to suit all practical purposes without being squeezed in infancy or before birth between the flat unyielding planes of mechanical process. But in this jazz age of fierce and intemperate movement, with its ups and downs and roundabouts, perhaps it is not so strange that in some minds there should set in a reaction which should finally express itself in such schemes as that presented some time since in *L'Architecture,* Paris, and reproduced in part in my December cargo where limited space made comment impracticable.

From Far India

The 19 December issue of the *Architects' Journal,* London, devotes many pages of text and illustrations to the work of Messrs. Bhedwar and Bhedwar of Bombay. It is a good showing; but the work generally might find itself as satisfactorily environed in any English or American city of parts as in Bombay. In all but the business premises in Frere Road, Fort Bombay, reproduced herewith, and one residential block, we discern a Northern feeling. The railway terminal, also shown in illustration,



From "The Architects' Journal"

ALEXANDRA DOCK RAILWAY STATION, BOMBAY
S. K. BHEDWAR, F.R.I.B.A., *Architect*

might be taken, in the mist, for the Kansas City Union Station, except that the American building is a bit simpler about the entablature, as might be expected. Lutyens and his co-workers got an Indian feeling into their buildings for the British Government in India; these native architects—I judge from the name and location that they are natives—have eliminated Indian feeling in favor of modern English. They, the Indians, have, however, been free and strong in their use of conventional Occidental forms. A later issue of this same Journal gives many illustrations of the rather satisfactory progress being made in the rehabilitation of Ypres. In this same number is presented the winning design for the Hull Art Gallery Competition. If I were a second-year man in some architectural school and had done it I might have patted myself on the back. But if I were a F.R.I.B.A. I should wonder if, after all, there were enough in architectural practice to make it worth while. Not a fresh thought nor a British thought in it.

Some Ways from Bombay

Construction, Canada, for December, 1923, reproduces drawings and photographs of the Edmonton (Alberta) Public Library. The central feature of this building violates general custom. It is rather the rule for a building to begin in a simple manner at the base and go to pieces at the top. The reverse is true, however, in this building, in which the structure seems to have suffered from a nervous disorder when it started out, and then pulled itself together and became calm, quite too calm. But it is something to pull one's self up after such a start as was made here. A technical school in the same issue has good qualities of plan and design.

L'Architecture, Paris, presents plans and elevations for the new municipally owned apartment houses to be let, at moderate rentals, to the middle class. I should like to reproduce one or two of the plans, but it is impracticable. I can find no sign of an elevator in these eight and nine story structures, in which sixteen or eighteen apartments use one stairway. That latter is not so bad, but think of the middle class or any other class being forced to walk up eight flights of stairs to reach home, at least to be *chez soi.* I'll warrant the dancing masters of France have developed some sturdy lower limbs among the middle and lower classes. Some good plans for tenement houses are shown in *Architekten,* Copenhagen, but cannot be reproduced.

A gem or two from *L'Architecture* we must not miss. So far as I am concerned, I am willing to let the illustrations speak for themselves; they are more eloquent than even I could be. These gems are from models displayed in the Autumn Salon, the entrance gates to which we reproduce. These gates will bear study; they would be perfect at the entrance to a watch factory. There is a lot of good material in these architectural papers—the fresh and crisp and attractive stuff being mostly domestic buildings. The public buildings are getting into a rut in the road to the commonplace; witness the North of Ireland Parliament Building, which might be taken, even in broad sunlight, for the Capitol of one of our own many æsthetically unenlightened States.

IRVING K. POND.

From "Construction"

EDMONTON PUBLIC LIBRARY

Housing and Community Planning

CLARENCE S. STEIN, *Associate Editor*

Higher Building in Relation to Town Planning[1]

There was once a great controversy which, I believe, profoundly moved the theological world of its day, if it did not even threaten the peace of empires, as to how many angels could stand on a needle's point. Today we look back with wonder, not perhaps untinged with some slight contempt, that serious people could have spent their energies in such a discussion.

But examining, as I have been constrained to do during the last twenty or thirty years, the attempts which mankind is making in various parts of the world to find out, not how many ethereal angels, but how many ponderous motor-cars can occupy the same square yard of ground at the same time, I begin to wonder whether the superiority of our intelligence to that of our theologically minded forefathers is as obvious as we should like to think!

Twenty or thirty years ago in this country it was generally assumed that great gains could be secured by overcrowding dwellings upon the land; that some dire economic necessity arising from these reputed gains compelled us so to develop our towns. That fallacy has now been pretty well exploded. Most of those who have examined the matter are agreed that, if people will, land can be developed at a density of 10 or 12 houses to the acre at little, if any, more, and sometimes at even less cost per house, than the same land can be developed for the same type of house at a density of 20 or 30 to the acre; that so far from gaining from overcrowding dwellings on land, such overcrowding yields less total return to the landowners, and affords a dearer plot for the occupant. So apart from other disadvantages, congestion of dwellings is really an expensive luxury. Unable to believe, however, anything so simple as that there is plenty of room for everybody, that it is crowding which causes most of our urban difficulties, modern business intelligence is now proposing to adopt vertical overcrowding. Unless we are careful, it will not be content without actual and disastrous demonstration that this particular form of overcrowding has even less to be said for it than the horizontal kind. The fact that this method has been fairly well tested in America; that it has created there urban problems of a difficulty exceeding anything which we know even in London; that 183 American towns containing 40 per cent. of the urban population have already adopted zoning ordinances, and that the remaining cities are hurrying after one another pell-mell to adopt regulations limiting height of buildings, as drastic as the vested interests already created will allow, does not seem enough to convince some of our urban theologians that many men cannot stand on the same flagstone at the same time, or more than one car move at one moment on the same piece of roadway. Nevertheless, in the hope that it is not too late to save our London from copying mistakes which New York, Chicago, and other American cities now regret, and the evil results of which they are now desperately struggling to remove, it seems worth while to examine the conditions prevailing in those cities, and to realize what would be the effect in London if we adopted the method of expansion upwards which the Americans are trying to check.

The arguments which can be brought against the adoption of high buildings are many and weighty. The law of diminishing returns applies to such buildings in almost all respects. With every added story the effective floor area per story is reduced, while the cost per square foot is increased; the greater proportional number of lifts required take their toll of space from each of an increasing number of floors. You do not dispense with transportation by going up; you merely change the horizontally moving omnibus for the vertically traveling lift, and make walking for even short journeys more difficult.

One witness before the New York Height of Buildings Commission calculated that the average time taken to reach the 30th floor would equal that of taking the subway express to a spot one mile distant.

The same law holds good as to light. Every story added tends to darken all the floors below. In spite of the bright light of New York, the number of dark rooms in which artificial light must always be used is far greater than with us. The consequent injury to health and loss of efficiency is said to be serious; eyesight is injured; tuberculosis and other diseases are encouraged. Much evidence was also given showing that high buildings lead to unstable property values. They unduly inflate the price of land and concentrate property development in small areas where the maintenance of values is very speculative, thus preventing a more widely distributed and stable improvement. The values of the lower rooms in adjacent buildings, whether themselves high or low, are depressed by the erection of higher buildings which diminish their light and obstruct their ventilation. It is true that one advocate of higher buildings gave as his reason the pleasure of living on the highest floors; but he overlooked the fact that the higher the buildings the smaller must be the proportion of people who can have the benefit of living at the top.

The conclusive argument against high buildings is that no real gain to the community is secured by adopting them. As hitherto used, they have so far deprived each other of light and air and so seriously congested the traffic in the streets as largely to destroy their own value and to deprive themselves of reasonably comfortable access, even if they could be spaced so as to allow proper light and air. If the streets could be laid out wide enough to carry their concentrated traffic without congestion, the total area covered would then be little, if any, less than that required to provide for the same community with buildings of normal height.

This more general or town planning aspect of the problem has acquired a special degree of urgency for

[1] Excerpts from a paper read before the Royal Institute of British Architects, 17th December, 1923. The reader will find it interesting to read this article in connection with "More Plans for More Chaos," which immediately follows it.—ED.

us during the last few years, because we appear to be following another lead of our American cousins in regard to the extensive use of the private motor-car. We are following far behind American attainments, but still evidently following. In that country there are something like 12 million cars, or an average of about one car for every 10 people. There are several towns in which the number of cars registered has risen to one for every five of the population.

It is not yet apparent what will be the saturation point of ownership of motor-cars. Mr. Ford, who has contributed more than anyone else to the supply, does not consider that that point has been nearly reached; and I am informed that the industry in America is at the present time turning out approximately half a million cars per month. We in this country still number our cars in hundreds of thousands, and our annual output in tens of thousands. While we may hope we shall not reach numbers comparable with those in America, there is yet little doubt that our present number will expand enormously. It is increasing now at a rate approaching 25 per cent. per annum. We must therefore reckon with a rapidly extending use of the private motor-car as one of the conditions to be dealt with in future. There is little evidence that this condition will be accompanied by diminution in vehicles, such as the motor omnibus, which is already threatening to present one of our most serious traffic problems.

To understand the traffic aspect of the high building question it is necessary first to realize the extent to which an increase in the height of buildings affects the demand on street space. Fortunately this problem of height has recently been investigated with great care by the Chicago Real Estate Board, in connection with the fixing of height limits throughout that city. In their report they give precise data for buildings ranging from 5 to 30 stories, erected on one particular corner plot, including the net rentable floor space, cost, and other matters. There appears to be a fairly constant relation between the net rentable floor space and the total day population. I have checked it in connection with one or two individual buildings like the Woolworth Building in New York, and in connection with the whole Loop area of Chicago, and I find that a figure of about 45 square feet of rentable floor per head of population appears to be near the mark. To be safe, I propose to take 50 square feet of net floor space per head of total day population. It is quite simple to establish a definite relation between this population and the footpath area of the roads, and for this I have assumed that, to provide standing room, a space 2 by 2 feet is necessary for each person; and to provide for walking a space of 2 by 5 feet, although crowds walking along a footpath rarely average as little space as this. It is not possible to establish a definite relation between the road surface and all the various vehicles required to serve buildings of different height; but as we have in America a fairly reliable relation between population and the number of motor-cars owned, it is easy to establish a relation between the floor space of the buildings and the road space required to accommodate these motor-cars, which is sufficient for my purpose. The average over-all length of a number of motor vehicles is 20 feet; allowing a little space for the cars to stand clear of each other, about 24 or 25 feet is as little as can be allowed for each car. I have assumed that the cars occupy a width of road space varying from 7 feet 6 inches to 8 feet, according as the carriageway most nearly divides up into a certain number of car widths. These densities of occupancy of foot-

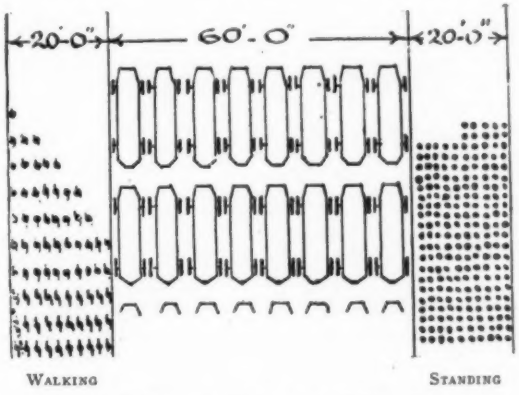


DIAGRAM 1—DENSITY TAKEN FOR CARS AND PEOPLE

way and road are illustrated in Diagram 1. The building taken for comparison of different heights was designed for a corner plot in the Loop area, 160 by 172 feet, with a rear alley. With five stories this building would have a day population of 2,018, and taking the average width of the roadways in the Loop area, which is about 86 feet, and the footway in front of the building as one-fifth of this, or 17 feet, the people occupying this one building would take up 504 feet of footway, standing; and 1,260 feet, walking. The average speed of people walking on the footway in a crowded condition comparable to this would be 224 feet per minute, so that this length of 1,260 feet of footway would be occupied for 5½ minutes before the occupants of this one building could pass away. If the building were increased to ten stories the population would not be doubled, but would be about 3,704, and the length of footway to accommodate this number walking would be 2,315 feet. The passing time in this case would be ten minutes. With twenty stories the figures would be—population accommodated, 6,930; footway occupied, 4,330 feet; time to pass, 20 minutes. Above twenty stories, owing to the large amount of floor space occupied by lifts on the lower floors, the increase of available space in proportion to the number of added floors becomes steadily smaller; at thirty stories, instead of a floor space enough to provide for 12,114 persons, the population would be only about 9,368; the length of footway occupied by even this number would, however, be 5,853 feet, and the time required for the people to pass a given point nearly half an hour.

Turning now to the conditions in the carriageway, it is safe to assume in America that the class of people forming the day population in city buildings, including a minimum proportion of children and others not owning cars, will at any rate own the average number of one car

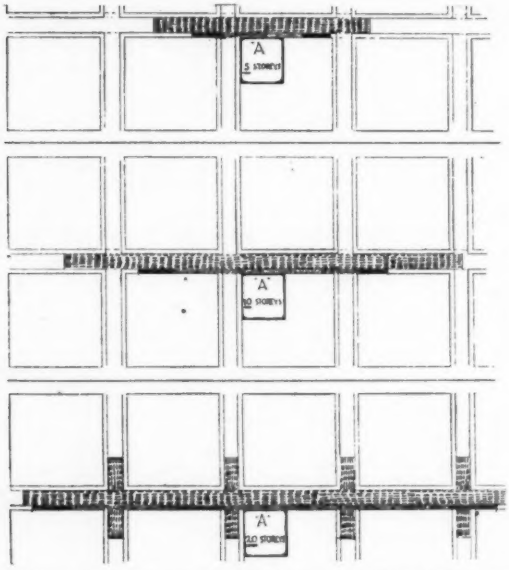


DIAGRAM 2.—STREET AREA REQUIRED FOR POPULATION OF BUILDING "A"—STANDING; AND AVERAGE NUMBER OF CARS OWNED BY OCCUPANTS. "A" SHOWN IN THREE HEIGHTS.

to every ten people. If these cars were to attend at the building to bring people to work or take them away in the evening, and were packed as closely as already indicated, they would fill the whole carriageway for 804 feet with a five story building, 1,480 feet with a ten story building, 2,772 feet with a twenty story building, and 3,744 feet with a thirty story building. (Diagram 2.) If only half the carriageway were taken on the ground —that the other half of the street might be left for the use of the buildings on the other side—these lengths would be doubled; it may reasonably be said, therefore, that with the present extent of ownership of motors in America, the cars require nearly twice as much length of roadway as the people would require walking along the footways. We must not forget, in considering these figures, that no account has been taken of the increase of other, particularly trade, vehicles, required to deal with the growing volume of merchandise handled by the increasing population. It is, perhaps, not necessary to take account of the increase in motor omnibuses and other similar vehicles, because we have reckoned the whole of the people as either walking or riding in cars. On the other hand, it is a well-known principle, which applies as far as I know generally in all towns, that public passenger traffic increases much faster than the population. In fact, the increase of traffic and of the number of journeys per head is frequently more than the square of the increase of population. That has been so both in London and New York. To the extent to which this holds true, Diagram 2 understates the increasing demand on the streets due to increase in height.

One more example for which accurate information is available is the Woolworth Building, which stands on a plot 151 by 195 feet, with streets on three sides. It has, including basement, 28 stories covering the whole area of the building apart from lighting wells, and a tower containing a like number of additional stories. The day population of the building is 14,000 people, in addition to large numbers of visitors. The front roadway is less than 100 feet, but for convenience we will take the usual New York main avenue width of 100 feet, having footways 20 feet wide and a 60-feet carriageway. On the basis we have taken the footway would accommodate a maximum of ten persons walking abreast, and I have assumed that the carriageway would take eight motor-cars abreast, allowing only 7 feet 6 inches per car. The day population of this one building would therefore occupy 2,800 feet of sidewalk standing, or, walking, 7,000 feet; and a minimum of half an hour in passing any given point. (Diagram 3.)

In view of these figures you will hardly be surprised that the utility of the private car is diminishing, or wonder at the enormous congestion of traffic in cities like New York and Chicago. It is only because the very tall building is quite exceptional in New York, and even on Manhattan Island is confined to very restricted areas, that an absolute deadlock has not already been reached. The vast majority of buildings, even in the downtown area, as may be seen from a recent aeroplane photograph, are still of the old height of five or six stories. Even as it is, the problem of traffic is almost insoluble. Along Fifth Avenue it is now regulated by signal lights. When the white light shows, the stream flows along the avenue; when the green light shows, the traffic along the whole length of the avenue thus controlled must stop at every cross street. These cross streets occur at intervals of only 88 yards centre to centre, and all traffic must stop with the signal, whether any vehicle requires to cross the street or not. The whole stream must be stopped long enough on the average to allow the traffic of the busiest cross streets to pass, and must be held longer than necessary at all the less busy cross streets. The arrangement is, in spite of these drawbacks, considered to be a great improvement on the previous condition.

The difficulty of dealing with the foot passengers is

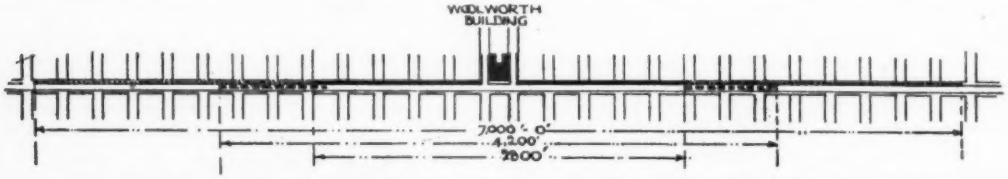


DIAGRAM 3.—SHOWING FOOTWAY AND ROADWAY REQUIRED BY DAY OCCUPANTS AND THEIR MOTOR CARS.

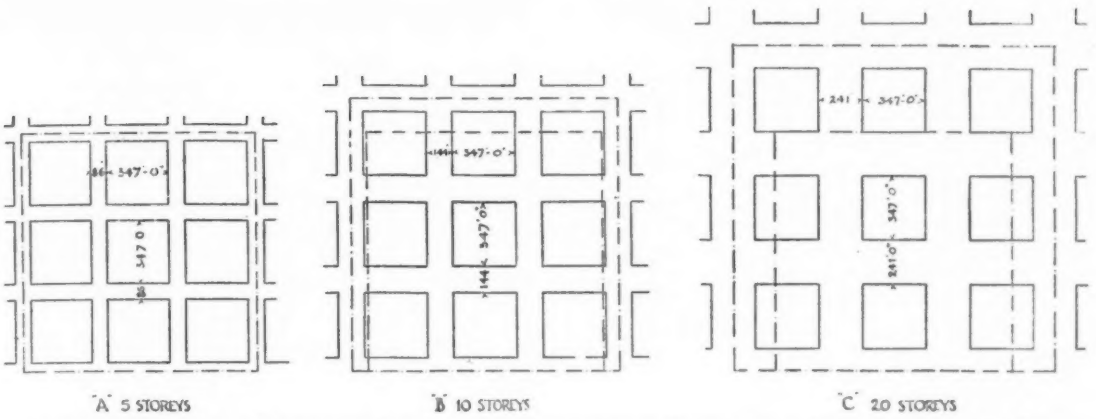


DIAGRAM 4.—ROAD SPACE REQUIRED TO GIVE EQUAL ACCOMMODATION IN PROPORTION TO FLOOR AREA, BUILDING BLOCK REMAINING THE SAME SIZE. BUILDING BLOCKS OF SAME SIZE AS THOSE IN CHICAGO LOOP

no less than that of the road traffic. It is estimated that the subway could deal, as a maximum, with 60,000 people per hour, if they could get to the trains. But we have already seen that the 14,000 people from the Woolworth Building would require half an hour to enter a station. The congestion at the tube entrances under these circumstances can hardly be surprising, but this is not the worst. Today it is doubtful whether any relief can be secured by constructing new tube railways. Even with the present limits of height allowed under the recent zoning laws, I was informed by the engineer in charge of these railways—and the figures we have looked at confirm this—that buildings, the population of which would fill the railway for the best part of an hour at the busiest time of the day, may and probably would be erected on two or three blocks adjacent to any new tube station. The total congestion, in fact, might easily be increased instead of being relieved by the new facilities. The advocates of higher buildings seem to take the view that it is the business of the public authorities who are responsible for the streets to find accommodation for any amount of traffic which their buildings may originate. Some of them, it is true, suggest that the owners might agree to a strictly moderate set-back of their building for every increased story in height. What general benefit this would afford beyond a little local relief in front of their building itself is not very clear, particularly in view of the length of footway, far exceeding the length of the building, which we have seen is required to provide bare standing space for the occupants of the high buildings. Many times even that length must be congested by those occupants before the volume of traffic is dissipated. But it will be well to prove the futility of such suggestions by showing what extra space would actually be involved. For this purpose I cannot do better than take the conditions in the central area of Chicago, locally known as the Loop. Full particulars are available in regard to this area, and, being regularly planned on the checkerboard system, it is easy to reduce conditions to diagrammatic form.

I have had some recent experience of traffic conditions in this district, and there can be no question that the streets, although representing about 40 per cent. of the total ground area, are quite inadequate to carry the present traffic with reasonable despatch, let alone comfort. I am satisfied that they would be taxed to the limit of comfortable conditions if the average were five stories instead of seven. Neglecting the cumulative increase in traffic which universal experience shows to arise from increased population, and assuming that full value is obtained by increasing the area of roads *pro rata* with the increase of the density of population, I have calculated the roads that would be required to give the same relative accommodation if the average height of the buildings were increased from the assumed 5 to 10 and 20 stories. In the first instance, keeping the average size of the building block the same, I find that for 10-story buildings to give the same ratio of street area to net floor accommodation as at present, the widths of the road would have to be increased from their present average of 86 feet to an average of 144 feet; if the stories were increased to 20, the width of the streets would require to be 241 feet. (Diagram 4.) If the increasing intensity of traffic were assumed to balance the loss of floor space, and its volume were taken to expand *pro rata* with the increased number of floors, which is probably nearer the actual truth, still greater road areas would be required (Diagram 5). It will be noticed that if such an expansion of road space had to be applied to the whole Loop area, to accommodate traffic resulting from the increased height of buildings it would be necessary to pull down a considerable part of the town surrounding this area to provide the additional land required! It is obvious, however, that any such increase in the width of the roads, even on the more modest scale first shown, would be impracticable, and that if it were attempted the traffic would not be relieved to a degree anything approaching the extent of the increase. The delay at every crossing for vehicles, and still more for foot passengers, owing to the increased width of the streets, would be very great. This is already noticeable in New York, where most avenues are 100 feet, and the cross streets

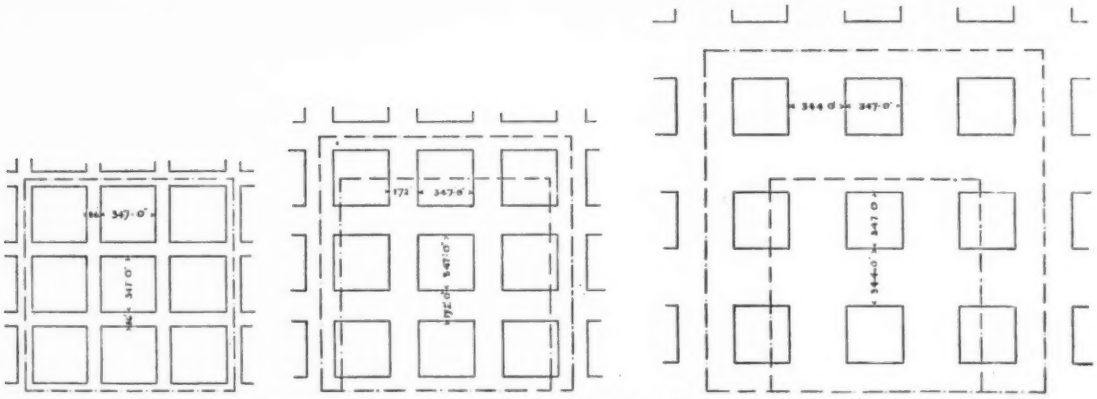
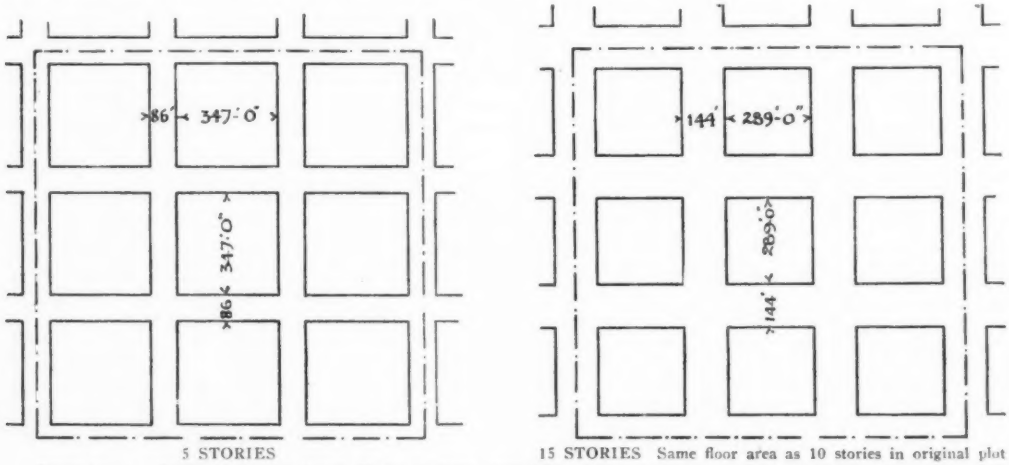


DIAGRAM 5.—ROAD SPACE REQUIRED TO GIVE EQUAL ACCOMMODATION IN PROPORTION TO NUMBER OF STORIES, BUILDING BLOCK REMAINING THE SAME SIZE.

64 feet, wide. The time occupied in crossing these many streets, and the extra delay to traffic in consequence, is obviously a serious factor, as compared with the conditions in the City of London, for example.

But suppose, instead of keeping the building block the same size, we try to follow literally the suggestion of some of the advocates of high buildings in this country, and provide sufficient additional road space by means of a set-back, thus reducing the size of the building block. How then should we fare? This also has been tested. (Diagram 6.) Taking the same bases of calculation, and assuming that the additional accommodation required is equal to the increase of the total available building area from 5 to 10 stories, I find, in order to provide the necessary set-back around one of the average blocks in the Loop, that the reduction in the size of the building to allow for enough extra road width to maintain a constant relation between floor space and road area would just about represent the area provided in an additional 5 stories; so that instead of increasing the building from 5 to 10 stories, the building would have to be increased to 15 stories to provide the required accommodation. In other words, if the owner of the aspiring building is to provide adjacent only to his own frontage an addition to the existing road space *pro rata* to the increase of net available floor area, his loss of land will be so great that he will have to add double the number of floors required on his original area! Even then only the roads adjacent to the building block would have been widened.

If the difficulty of accommodating the pedestrian and the moving traffic is great, the case of the standing motor-car is even worse. Of the 60,000 motor-cars which the present occupants of the Loop own, only 3,500 can find parking places in the Loop area. If the whole road space were packed solid with cars, there would still be only standing room for 11,000 cars, or one-fifth of those owned. As a matter of fact, the car owners of the Loop area have appropriated the large open space between Michigan Avenue and the Lake, set aside for Grant



5 STORIES

15 STORIES Same floor area as 10 stories in original plot

DIAGRAM 6.—SHOWING WITH SAME ROAD SYSTEM THE WIDENING OF ROAD AND CONSEQUENT REDUCTION OF BUILDING BLOCK TO GIVE SAME ROAD ACCOMMODATION IN PROPORTION TO FLOOR AREA.

Park, and it is no uncommon thing to see 25,000 motor-cars, more than twice the number that would fill the streets of the Loop, parked at one time in this gigantic motor garage. Indeed, the promotors of Daniel Burnham's great town-planning scheme, of which this park is a conspicuous feature, are not free from anxiety as to how to recover this area from the motor owners to lay out and plant it.

As the motor-car is mainly used in America by people who do not employ a chauffeur, the question of parking the cars already presents an unsolved problem. The difficulty is felt especially in the more congested areas, where it has had to be solved by forbidding cars to stand more than a few minutes, and then only in the less frequented streets, which means that the majority of car owners can no longer use them for going to and from work. Even in small cities, however, it is becoming a serious problem; and plans of city improvements now indicate not only the lines of traffic provided for, but also the amount of space left over for parking cars against the sidewalk. It is common in cities of quite moderate size to drive round several blocks, or along several streets, before parking space can be found. Anyone going from business to his club to lunch may frequently find that in walking to the car and back, and walking from the nearest parking space to the club and back, he has traveled a greater distance than if he had walked from business to the club!

Enough has, I hope, been said to prove the main contention—that increase in height of buildings necessarily involves augmented street traffic; that where the traffic has already reached the comfortable capacity of the streets, any further increase in height must increase congestion, with consequent loss of time and efficiency for all users of the streets; and that this increase cannot in practice be met by street widening, because the utmost which can be done in this direction can barely cope with the other causes which in all growing modern towns are tending to swell street traffic.

Increased height, therefore, means increased traffic congestion. It is urgent that we should realize this while there is yet time.

Let us compare conditions in the Loop area of Chicago with those in the City of London. The areas are in many ways comparable; each is the main commercial centre of a great city. The City of London, with an area of about a square mile, is the heart of a town and urbanized region the total population of which approaches 9 millions; the Chicago Loop area, about one-third of a square mile, is equally the centre of a total population well over 3 millions; both areas are served by numerous railways, street cars, etc., and contain a large number of official and commercial buildings, retail stores, and warehouses; one is bounded on the south side by the River Thames, the other on the east side by Lake Michigan. The City of London contains about 638 acres, the Loop in Chicago only about 212 acres; the day population of the City of London is about 416,000, or 614 persons to the acre; the day population of the Loop is about 600,000, or 2,830 persons to the acre. In Chicago the total streets represent about 40 per cent. of the area; in London, including private back streets, only about 25 per cent.; in Chicago few of the streets are less than 46 feet wide, some of them are over 100 feet, and the average width is 86 feet; in the City of London the average width of the streets, including some which are footways only, is about 28 feet. In spite of the relatively liberal provision of sidewalks in Chicago, it is common at busy times to see foot passengers swarming off the footway until they occupy the whole street area, and completely stop for the time being all vehicular traffic. At other times, the queues of vehicles waiting to pass some of the important crossings accumulate so that the rearmost vehicles in the queue may have to wait three times before they are able to pass one of these crossings. The queue becomes more than twice as long as can be allowed to pass during the few minutes' interval it is practicable to hold up the opposite stream of traffic.

These conditions have arisen from the intensive use of a limited number of 10- to 20-story buildings, sufficient only to raise the average height over the whole area available for building to 7 stories. If the land in the City of London should be used to the same degree of intensity, and sufficient high buildings were allowed to give an average of 7 stories as in the Loop, I estimate that the day population would be 1,845,000, instead of the present 416,150. In that case the narrow streets of the city would have to carry four or five times the present volume of traffic, already far in excess of their comfortable capacity. If not a single story is added to any building in the City of London, the increased use of the private motor car and other causes will increase the traffic in the area to a very serious extent.

Unfortunately I have come across no evidence that the increasing use of the private motor-car causes a diminution in the patronage of public means of conveyance. On the contrary, experience shows that this demand for public transportation facilities is still rapidly growing. The increasing extent to which the streets of London are now being occupied by the motor omnibus must be apparent to everybody, and the lengthening queues of these 'buses which accumulate on important road crossings already present a formidable appearance. It is clear that, quite apart from any increase in the height or volume of buildings in the central area of London, we are likely to face a steadily increasing volume of private and public transportation on the streets. It will tax all our powers to provide adequate road space to deal with this traffic, without permitting any increase in the height of buildings, with the consequent further congestion of people and business in the centre.

Advocates of high buildings suggest that their policy would at any rate reduce the general traffic problem. I find no evidence to support this, and much that tends the other way. If the concentration of people in high business and residence buildings tended to reduce traffic, a comparison of the traffic conditions in New York with those in decentralized London should give some indication of this. On the contrary, the number of journeys per head of the population in New York exceeds 500 per annum, considerably more than in London, where last year they numbered 390.

It is true that Mr. Frank Pick, from whose recent paper read at the London School of Economics I am

now quoting, estimated that the journeys per head this year (1923) will reach 414. This will indeed be a striking testimony to his genius for stimulating traffic by fascinating pictorial advertisements, aided a little perhaps by the abnormal shortage of houses, which obliges a larger proportion of the population than usual to live in the wrong place. But even that figure, if reached, is well below the New York number; and I have no doubt there are counterparts to Mr. Pick at work boosting up the number in that enterprising city also.

The amount of cross traffic in London is enormous; it is estimated that 60 per cent. of the population engaged in business or labor in the area lives in one place and works in another; while for all purposes something like three million people converge on the central areas daily.

Last year I spent some time consulting with the committee preparing a new plan for Greater New York on this and similar problems, and was impressed by the fact that the multiplication of dwellings and of business premises in the centre, due to high buildings, far from relieving the strain upon traffic, tends considerably to increase it. Moreover, there was no evidence that any economy in the space covered by the town or the distances to be traveled was secured as a result of concentration in high buildings; certainly no reduction was apparent in the time occupied in traveling about the town or to outlying suburbs. This came somewhat as a surprise. Like most casual visitors, I had not realized how small a proportion of New York is represented by Manhattan Island, nor had I previously experienced the very long railway journeys necessary to reach some New York suburbs. If circles having a radius of five and ten miles respectively are drawn on the maps of London and New York the result is instructive. A considerable proportion of the area within the circles as applied to New York is occupied by water; but a very large area of the town falls outside the outer circle; whereas the bulk of the built-up area of London is within the inner circle; and most of the farther suburbs, such as Ealing, Hendon, Woodford, Ilford, Woolwich, Bromley, with the larger part of Croydon, Merton and Richmond, fall well within the outer circle. Chicago also occupies a remarkably large area. The territory of the town itself extends for a length of twenty-six miles, with a width varying from six to nine miles. Outside that area are considerable suburbs, such as Evanston and Winnetka in the north, and the important Gary industrial area to the southeast. It is not easy altogether to explain the large areas covered. A much greater street width is provided in American cities, and this has a cumulative effect on the expansion of the town. (Diagram 4.) Moreover, as the area of a town varies not in proportion to the diameter but in proportion to the square of the diameter, a difference of density of dwellings, or of occupancy generally, has less effect on the distance traveled from the suburbs to the centre than would be expected. (Diagram 7.)

These considerations go some way to explain why the more general use of high buildings leads to little, if any, reduction in the size of American towns. A consideration of our own habits will suggest why they lead to an increase rather than a reduction in the demand on traffic

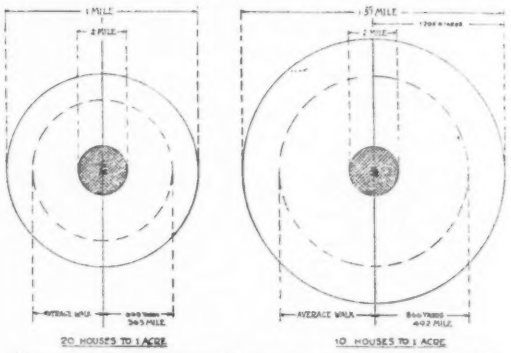


DIAGRAM 7.—AVERAGE WALK TO STATION AS AFFECTED BY DENSITY PER ACRE OF DWELLINGS.

Houses to Acre	*Ave. Plot Size*	*Ave. Walk*
10	420 sq. yds.	866 yds.
20	185 " "	639 "

RAILWAY STATION IN SOLID BLACK; BUSINESS BUILDINGS, ETC., IN HATCHING; RESIDENTIAL AREA IN WHITE.

facilities. About 13,455 people who work in London are brought thirty-five miles every day from Southend. Let us examine the relative transport facilities which these people require, compared with what they would need if they were added to the population adjacent to the central area by increasing the height of the buildings there situated. Instead of 13,000-odd people taking one journey to and from their work in the day, and an occasional extra business journey, is it not clear that if they lived in the centre, they and their families would be on and off the various means of transport all through the day; that the extra tradesmen with their delivery vans; postmen, milkmen, doctors, and all other people attending their daily wants would enormously swell traffic in the central streets? Instead of 13,000-odd persons being carried twice or three times in a day, a population of four or five times that number would be utilizing the streets and all the various means of public transport the whole day. I venture to suggest that, contrary to the view of the advocates of high buildings, it is approximately true that in a large town, the nearer people live to the centre, the greater is the demand made on the street and the various public transport conveniences, and the farther they live from the centre, the less is that demand. Anyone who will consider the ways of his own family and those who serve them will confirm this.

The real transport difficulty in connection with the residents in Southend and similar places is of quite a different nature. It is not so much a question of congesting the traffic in the centre, as one of the cost of providing adequate transport facilities at the two busy times, when folk are going to or from their work, in cases where the demand for transport during the remaining hours of the day falls far below the peak load. This problem is by no means insoluble. The chief difficulty springs from the capital cost of the permanent way, which may have to be spread over a short daily use of the line. The running of a full train from start to finish of the journey is more economical than the condition of most

suburban traffic, in which the load begins to diminish at the first stop, and most of the trains have one-third or two-thirds of their seats empty for a considerable part of the journey. The rolling stock can easily be diverted to the lines where midday traffic is most intense. The capital cost of the permanent way itself would be immensely reduced if the routes were reserved in the regional town plan. The means of transport are now so varied that one suitable to most kinds of load could be provided if there were effective co-operation between town planning and transport authorities; while the efficiency of the transport itself could be increased if all means were co-ordinated under one direction.

The haphazard growth of our towns has encouraged haphazard thinking about them. The owner of a building site is naturally obsessed by the importance of securing the most intensive utilization of it. When he has fully occupied existing buildings he will want to crowd it with others, and when these are occupied he will seek to pile more stories on the top. The town planner, surveying the territory as a whole, may take a very different view: he sees that it is often less costly to acquire a second site than to overcrowd the first; he realizes that midst the scarcity of many things there is no want of space, and that congestion is not due to lack of land.

Some truths seem too obvious to be readily credited; men are prone to try clever and complicated devices to attain the same end by a more devious route. Perhaps the nation is feeling specially poor, but to produce more wealth or to waste less seem too simple methods of enrichment to be popular. Oppressed as we are too with the miseries of overcrowding and housing shortage, how hesitatingly does the simple remedy of building plenty of good houses secure full recognition! Similarly, with towns already unbearably congested, and their street traffic in danger of being reduced to crawling pace by its excessive volume, the idea that congestion would best be relieved if we desisted from crowding, or traffic most effectually be reduced by better distribution of people and buildings is much too simple to be readily accepted. Indeed, many seem bent on piling more building on the top of that we have, and boring more subways or erecting more elevated tracks to pour additional multitudes into the already swollen torrent in the streets.

To the town planner this seems sheer madness: but perhaps there is something unusual in his make-up which predisposes him, with childlike innocence, to put more faith than some of his neighbors in the simple and the obvious. Or perchance, if an architect, there is something in his training or his practice which encourages this tendency. At least it is a fact that the Art of Design, which it should be the purpose of his training to develop and his life work to practice, consists largely in finding simple solutions for seemingly complex problems. When the designer cannot see the forest for the trees he is a lost soul. He must depend on his trained imagination to keep the forest as a whole ever clearly in his view while his mind is occupied threading its way through the obstructing trees and their distracting shadows. If he misses the one simple and direct path to unity, which when found will appear to all to have been quite obvious, he will usually have produced not a design at all, but a mere compilation.

I have ventured to draw from American cities a warning as to some things which we should avoid, and to use their experience as a guide for our future steps. Lest I be thought to undervalue the marvelous civilizing achievement those cities represent, or to be lacking in appreciation for the genius which their architects have shown in handling the novel and complex problems in design which have been presented to them, I propose to illustrate the difference between a design and a compilation. Some of their lofty buildings soaring up many hundred feet into the air are as beautiful as they are impressive. And the same sense of unity and simple rightness is as evident in many of the buildings which do not derive impressiveness from their height. The Lincoln Memorial is a temple as worthy of the commemorating nation as the statue it contains is appropriate to the man whose memory is there lovingly enshrined. It is one of the most moving buildings I have seen. The architect, in spite of the distractions of log cabins, freed slaves, and the hundred other accessories that crowd around that picturesque life story, has gone straight for the main simple purpose: a great nation remembers its greatest son.

Men who have achieved within a few decades such culture, such a high level of design as these buildings display, when they turn that capacity upon the problems of town planning, as they are beginning to do, will, I am convinced, achieve equal success.

Beautiful as are many of the towers of New York when considered singly, there is yet lacking to me the sense of grouping between them which would spring from their forming parts of a greater design. Fine as individuals, they bear yet little relation or proportion to each other. I am inclined to compare a cluster of them with the three related towers of our older Lincoln.

However that may be, as architects we are trained to rely on orderly planning and proportional relation. We naturally believe that they can be applied to towns; that the application of foresight and planning would result in the better distribution and relation to each other of industrial, commercial and residential areas, and could secure the more generous reservation of belts of open space to protect and define the different parts of the town, the wards, the suburbs, the dormitories or the satellite towns; that cities should extend not by fortuitous accretions around the circumference, but by the addition of definitely planned and defined suburbs or satellite towns, each made as self-contained as possible, depending on the main centre only for those functions which are by their nature centralized; that the position of suitable transit lines to connect these parts to the centre and to each other could be laid down and reserved, and that congestion of street traffic could be prevented not only by the provision of adequate roads, but mainly by the proper localization of the life of each district, and the saving of a large part of the useless carting and rushing about which now springs from so many people, buildings, and parts of the town being in the wrong places. We are convinced that congestion will be cured not by increasing the density of the crowd, but by transforming the crowd into an orderly queue. This at least is the alternative we offer to the policy of expansion upwards, convinced that crowding gains nothing.

RAYMOND UNWIN.

More Plans for More Chaos

The witness had been sworn and was confidently testifying. He had arranged his information in well-ordered columns of figures. The population, the growth of population, the number of old and new habitations, the number of rooms in apartments. He proceeds through processes of addition, multiplication and division; fractional people emerge from his calculation and it becomes clear that there is no shortage of habitations.

Again the formula of being sworn and the process of testifying. The new witness proceeds through the use of more well-ordered columns of figures and mathematical processes; fractional people again emerge out of the calculations and this time it becomes equally clear that there is a serious shortage.

So it goes on day after day. Before the Commission, sitting to determine the state of housing, come many witnesses. Landlords, tenement dwellers from the slums, authorized representatives of owners of property, spokesmen for tenants, social workers, lenders of money, housing experts, realtors. They come and testify as to conditions—to facts, and so swell the flood of evidence which runs alternately to affirm and to deny.

I puzzle as I observe the flow of conflicting testimony. Are these sworn witnesses wilfully coloring their testimony; or are they presenting "facts" as the same appear from the several angles from which they view them? Seemingly the conflicting run of testimony could be accounted for on such grounds. But so to account for the discrepancy in the statements of the experts testifying does not help to answer the question: How may we find out about this matter?

So I cast about for a viewpoint from which to observe the present state of housing. I would overlook the entire field, make note of conditions and then form conclusions. Specifically I want to know: Is there a shortage of habitations—are there enough houses? But first I must know whether the conditions under which people live are "tolerable" or "intolerable." And I do not even know what I mean by these terms I use so glibly. I can discover no stable ground upon which to establish a base from which to deploy my lines of inquiry.

I think of "the standard of living." But what does one mean by the standard of living—that constantly employed term? What did it stand for yesterday; what does it stand for today; what does it stand for to those testifying under oath to bring only facts to bear witness?

I attempt to give it definition. I consider it in the light of our knowledge. I consider it with reference to our instinctive traits of character; I conceive it with reference to the potentialities of our present industrial capacity. But definition eludes me; for the standard of living is not given by these important factors in the case. It is to be defined by as many and varied conditions of life as there are people who attempt to define it.

But a qualification follows so sweeping as all but to deny that statement. The "standard of living" which serves to define conditions referred to as tolerable, or which by common consent is accepted as the base line in determining wages, is not a function of our instinctive traits of character, nor of our knowledge and skill, nor of our productive capacity. These factors play a part; they serve as the path along which we go upon imaginary excursions toward an ideal; they form the groundwork of our wishing lives. But what passes for a tolerable standard of living, so far as concerns the fortunes of the vast majority of our population, is a consequence—the outcome of our adopted institutional scheme which revolves around the idea that the interests of all are best served when each takes for himself all that the traffic will bear.

Which brings us back to the point from which we set out, to the point from which the statisticians started, to the origin of the conflicting run of testimony, to the very occasion for the inquiry into the state of housing.

I leave the hearing. The street is like a great sluice pouring its contents into the subway where the flood surges as the trains enter and leave the station. Through the confusion of the jostling crowd and the din wing the ideas flushed by the testimony of the hearing. Associate ideas rise: More houses; more subways; more bridges above and tunnels beneath the rivers; double decked streets. Commissions on housing; commissions on transit; commissions on port and terminal facilities. Associations, committees, social workers, self-appointed spokesmen, architects, housing experts, city planners, reformers, coordinators of reforms—all organizing—inventing activities—preparing programs—issuing propaganda.

What signifies all this activity? Where is it leading? I do not know. But I sense a change of direction. It is certainly away from the time-honored doctrine of self-help and individual initiative. Apparently we may no longer depend upon the anarchistic action of the individual to supply all these things—to bring the population of New York up to 30 millions. For it is now and again said that the city or state must step in; and there is a tolerant attitude toward measures of subvention. Seemingly, there is no help for that, for seemingly it is through subvention alone that these things are to be had in sufficient quantity and in time.

But why are we on the point of changing our course—of casting aside these time-honored principles of economic doctrine to the end that we may achieve ever-increasing complexity and magnitude? That is to say, why do we resort to measures of subvention to the end that we may more speedily and more certainly go forward with the work of building our tower of Babel—our bridge that goes nowhere?

In the subway I note the faces of people riding in discomfort. Many are reading. Reading of the housing shortage and of the plans of the Commissions for more houses, more subways, more bridges, more tunnels, double decked streets—plans for the coming of 30 millions.

Plans! Yes, plans for the building of these specific things, no doubt. But are these plans formulated with respect to a conceived, comprehended end? I doubt it. For in them I can find nothing more definite as an end to the effort involved than ever increasing complexity and confusion; ever increasing magnitude.

So, as I scan the faces I ask: Do you, and you, and you want these things for any added pleasure and comfort that they might conceivably bring to you? Do you advocate collective action and measures of subvention that we may more rapidly increase the complexities of living, that we may more rapidly increase concentration and congestion? I do not know; but I think that soon you may be among the advocates of such action.

And most of you will admit at the same time that these things in themselves—the increasing concentration and congestion, the mounting complexities and discomforts, the ever increasing magnitude—are not desirable. But you will rationalize: There are our instinctive traits of character, formed in the night of time, which operate to herd us together; and these impersonal events always seem to run to a beneficent end! And so you accept and approve plans of action—aimless plans fading off into confusion and chaos—and so you will follow along and affix the title: Steps of the Evolutionary Process—Progress.

But why do you rationalize; why do you view as elements of Progress these utterly aimless plans fading off into chaos? Why do you with a Heave Ho! Altogether! strive for those things which you do not want individually? No doubt, if we sought the reason, we would tend to oversimplify the complexities of the case, and so would leave on one side a host of causal circumstances which would account for your attitude and action; but it seems to me that you now struggle to produce the things you do not want—things that to you, individually, are matters of utter indifference; that you now strive for greater concentration, congestion and magnitude, since they are now rated as good. For it is out of such conditions that the price increments of ownership are largely derived. Activities which tend toward this end are rated as beneficent. So it follows by easy steps under our system of investing, of living by owning, that a condition of stability with respect to the pecuniary values of ownership must be viewed—not as a good, but as a sign of decay. Action which would arrest increasing concentration of congestion is, per se, under this point of view to be deplored.[1]

Of course, in devising plans for more houses, more subways, bridges and tunnels—for millions upon millions of people—you work toward ends that are good in your sight. But it does not follow that their outcome is due to be other than disintegration and decay. For the run of events over the known past would seem to indicate that man has ever gone to his work under guidance of such ideas as he had accumulated, meeting the conditions of an ever changing material environment in ways that, presumably, were good in his sight. But the upshot of it all has been a series of events running in cycles of growth and decay.

So what ground have you for your optimistic attitude when you rest your case on the assumption that events tend toward a beneficent end? Does not the evidence at hand—the conditions of tension and uncertainty under which men now live and do their work in our rapidly congesting centers of population—suggest that our adopted institutional scheme has approximately run its course? Does it not suggest that the tension and the uncertainty will not be decreased by increasing the magnitude of the material and institutional complexities?[2]

No doubt you who are riding in discomfort would greatly deplore such an attitude; and you would rate it a pity that one should take such a view of Progress. For clearly what is implied is that something would be gained by standing aside while Progress goes by neglect. But a passive attitude would not increase the velocity at which we drift into cities of thirty or forty millions. In that negative sense it would aid in distribution.[3]

How to provide for distribution rather than concentration of population! As a suggestion, that cuts squarely across the aims of every vested interest involved however remotely, and hence is to be rated absurd and irrational. But it is absurd and irrational only with respect to an institutional scheme which has as its central aim the hope of living by owning. Which serves to show in what manner of trap we of the twentieth century are caught.

F. L. A.

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[1] Any community in which the material facts, its land, its buildings, and so forth, are not worth more today than they were yesterday, where they may not be rated at less today than they will be worth tomorrow, where existing material facts may not be capitalized at something more than they cost—such a community is by common consent rated a "dead one." And what is most certain to place a community outside this category of dead ones is increasing concentration, congestion, magnitude—an increase of population. So that "stability," that state of affairs oft referred to as something to be sought after, is not after all a condition to be desired by those who own, and so by the logic of business it is not a condition to be desired by those who do not.

For as seen in relation to other communities which are rapidly expanding—becoming congested—a stable community appears to be moving backward at a like rate of speed. From which it follows that the basis of capitalization appears to be shrinking, thus threatening the whole credit structure of the community. No wonder, then, that a serious proposal looking toward stabilization or decentralization fails to draw out shouts of approval. No wonder, then, that such a proposal is not even worth advancing as a topic for academic discussion.

[2] Ordinarily the growth of urban communities is accounted for on the ground that it is due to the promptings of our instinctive traits of character. Unlimited concentration is therefore viewed as a trend that can't be helped; and according to this hedonistic view a proposal to arrest this trend would appear dubious indeed. But many illustrations come ready to hand which, if closely scrutinized, would seem to indicate that the peculiar growth of the modern urban community is due mainly to institutional and economic factors of a transitory nature. The youths and maidens who abandon the life of rural communities do so under the coercive action of an education which runs all the while to degrade the status of those engaged in materially productive work. "Merton of the Movies" may be an account of instinctive action; but its significance may be better understood if the force of institutional and economic factors, bearing upon Merton, are taken account of. In the same way the shift in the distribution of population which occurred in England a century and a half ago may be better understood if the Enclosure Acts and the rise of machine production figure as factors in the genetic account. The rural population may have sought comfort in centers of population, but the seeking was instinctive only in the sense that it was made to avoid want and privation occasioned by an institutional change and the introduction of an economic factor into the case. The move was made under compulsion; and was not instinctive in the sense that the instincts act creatively toward a beneficent end.

[3] This is not to suggest that all's well with the rural population. Something has been said in the press about their condition, and legislative measures of subvention have been proposed for good or ill as the case may be. So that the implication—that we should so shape our plans of inaction as to bring on an increase in the numbers constituting the rural population, of whom it is said that they are now laboring under some difficulties and numerous handicaps—may not appeal as helpful. And, true enough, under the circumstances the gains so to accrue do not appear upon the surface. But a little thought will eventually come abreast of the proposition that the rural population—so long as it remains truly rural—must of a necessity busy itself in materially productive work, and as a final resort, if pushed to it, can manage to make both ends meet. Which is more than may now be said of those who make up the urban accummulations of Christendom. So that, to deny, by inaction, measures of subvention with respect to increasing concentration in urban areas is not in the long run, after all, to deny to anyone the prospect of living by engaging in materially productive work.

The Quality and Quantity of Buncombe

It is said that the word "bunkum" was in use in New England some time before Felix Walker, representative in Congress from Buncombe County, North Carolina, made his now celebrated speech. Noticing a certain impatience among his Congressional listeners, he paused long enough to remark that "he was not speaking for their benefit but for Buncombe!" The earlier derivation of "bunkum" is said to be from the French-Canadian *"il est buncum sa"* (il est bon comme ça). In our day the colloquial abbreviation is "bunk," although our English brethren, quick to appropriate a bit of slang for which their need was not far short of our own, still cling to the North Carolinian patronym.

Be these things as they may, a considerable case for bunkum is just now being made out against the building industry. To be sure, bunkum is in the air. We have it wholesale in Government, for example, and the present spectacle is enough to make even the most jocund voter gasp privately if not in public. What the complete extent of bunkum is we do not know. We might hazard a guess that it is somewhere around 98 per cent of everything that is spoken or written, at least. But in the building industry we have a good deal of sly winking and innuendo over the architect's fee, the quality of his specifications, the immorality of the contract. The press just now is rather more than ordinarily full of jibes and jeers at the building business, and while there is not much that can be done about it, perhaps, there is certainly nothing worth doing until the industry explores itself. The Congresses of the Building Industry are the best thing for that purpose we have had up to the present time, and at a luncheon given by the New York Congress in January, Mr. Charles L. Eidlitz, a well-known electrical contractor, talked on what he called "De-bunking the Contract." We imagine there would be some differences of opinion as to how much of what he said was true, but we think no one would deny that some of it was true. The question, then, is—how much, and what part?—and the answer is not for us. We reprint Mr. Eidlitz's remarks and also a contribution following thereupon sent us by an equally well-known sub-contractor, who, for reasons we are bound to respect, desires that his name be withheld for the moment.—EDITOR.

Mr. Eidlitz spoke substantially as follows:

It appears to me, that in recent years (and I mean particularly the last ten or fifteen) there has crept into the building business, an unusual amount of *bunk*.

In my father's day, a builder took a great deal of pride in his work. Every brick had to be a perfect brick. Every joint had to be absolutely right. The mortar had to be just as good as it was possible to make it, and the lines, the levels, every detail, had to be perfect or as nearly so as was humanly possible.

It was nothing unusual in those days for my father or, for that matter, for other builders of his time to come on the job, take one look at a wall and order it taken down and rebuilt (even though it was contract work) because it did not suit him and did not reflect the quality and accuracy which he stood for. If any of you men here, architects especially, came on your job and found your builder ordering a piece of wall taken down (even though it were built in the wrong place) I really believe you would rush to the telephone and call for an *ambulance* or an *alienist*. In those days a man felt that his work reflected his honesty and ability. Is that the condition today?

Now, there may be a builder in this city who works on this basis, but certainly such men can be counted on the fingers of one hand. What has brought about this change? I am asking you the question, but I do not expect you to answer it. The answer is *bunk!* much and more *bunk!* And so I argue logically, I think, that if bunk is the cause of lack of quality, pride, responsibility and self-respect, then if we can de-bunk the contract we may expect a return to decency.

But you can't de-bunk a thing until you gather the bunk together where you can see it and dig it out. And when you dig it out, you must take it out by the roots. I do not expect to be able to do this here today; but I hope to point out just where some of this bunk is, mark or stake it out, paint a picture of it and leave it there exposed and naked so that you may have it constantly before you, like a September morn.

As I look around this table and recognize the different interests represented, i. e., architect, general contractor, manufacturer, sub-contractor, I wonder whether you really want the truth, or whether the usual pussyfooting would not be more to your liking. I attend a great many functions and every once in a while a speaker is criticized. They say "he was unhappy," "he went too far," and it has been my observation that what they really should have said was "he told the truth and we don't like the truth; we like to be stroked with the hair and not against it," but *I* always realized that no animal I know of goes after fleas with the grain; it always goes against it.

And so in an assemblage of this kind, I find that if the speaker is a sub-contractor he soft-pedals on the general contractor and architect, but he lets the supplier or manufacturer have it *right in the eye*. When the general contractor has the floor he smears it all over the sub-contractor and daintily strokes the architect's pelt in the direction of the grain. When the architect speaks he, being a believer in reciprocity, pianissimos along the entire keyboard.

Now that's the beginning of the bunk in the building business. What then is really the matter with our building contracts? Nothing much! only that the architect is supposed to be infallible, that the general contractor aids and abets him in this idea, and that the sub-contractor is presumed to be a mind-reader and a graduate gambler, whose slogan should be "heads I lose, tails you win"; and the poor boob is expected to smile while he signs, seals and delivers his contract, and agrees forever after to hold his peace.

Is it a wonder then, that if by some chance either or both architect and general contractor can be caught asleep at the switch, this bag-carrying sub should suddenly get

a stiffening of the spine, and make an attempt to stick it in and turn it around?

It has been my job for the past year to try to change this condition in the electrical industry, and I want you to know that it's been *some job.* Now, naturally, I know more about the electrical end than I do about the other trades in the building business, but from what I am told by nearly all, the conditions seem to be identical.

If you bought a railway ticket, and in the rush the agent gave you too much change, you would consider it dishonest knowingly to pocket the money, even though you might argue that the railroad company had plenty of funds and wouldn't miss it. No, sir! you couldn't sleep that night; you couldn't look your wife and children in the face unless you went back, even at the risk of missing your train, and called his attention to his error. I might cite dozens of examples having the same answer.

But let some contractor put in a price which, on the face of it, shows or indicates that he has made an error, that he has omitted or misunderstood the requirements—do you take the chance of missing the train to a signed contract? *You do not!* You get to him as rapidly as possible, and get his John Hancock on the dotted line for fear he will wake up. So you have landed him, but he, feeling that you must have known his error, becomes sore. And yet he needs the money—but is it a wonder if he tries to get back some of this loss when you, unintentionally, give him an opening?

I know that the general contractor will say that he bases his bid on the low figure received, and that there is no reason why he should not do so. Again I am back to my father's time. They didn't use the low bid in those days if they thought the bidder had made an error or felt that he could not do the work properly for the money. Those men had a sense of responsibility, not only to their owner, but to everyone with whom they did business.

But what of the builder who is on a percentage or a fee basis? What excuse does he give? Why, frequently he makes capital out of this unfortunate sub's plight, and points it out to his architect or owner as an evidence of his cleverness. Why! many concerns actually advertise this sort of thing! If you were to translate some of their ads, de-bunk them, so to speak, they would read about as follows: "Give us your job—once we have the contract we will bait our line and whip the contracting stream up and down till some *poor, half-starved, irresponsible, fat-headed fish* takes the hook." This sport goes right down along the line to the sub, who practices the same game, only with a view to whether it will get him by. Quality cuts no ice with him either. Does this make for confidence or good will?

And now let me ask you, particularly, why should a sub-contractor—and I don't know but what nowadays it applies to the general contractor, and frequently even to the architect as well—why should he try to do anything more than he is absolutely compelled to?

Formerly a man gave an owner service and quality and so the owner gave him the next order. It was not essential that he be the lowest bidder. He was considered low enough for the quality that the owner insisted on. Today price is *king.* Yes, price is *queen,* and it's all the little princes and court jester; and that's *bunk!*

What chance has a sub-contractor for building good will today? He must be low to win. Yes, he must make a bigger mistake than any of the others to win. That doesn't make for quality and good will! But, you may say, when we have work to give out on day work or the percentage basis that's when he comes into his own. Well, does he? If it's a small job you may pay him his overhead and a profit, but usually on a sliding scale downward according to volume, so that if it's a job of volume he gets only his overhead and if it's very large you reduce him still further, and the one chance that he had is again taken away, and he accepts this because he fears that if he does not do so someone else will; and the Sherman Act prevents these men from getting together and establishing a method of getting a fair price. If it were not for the Sherman Act I could in the electrical end correct this in twenty-four hours, but if I did so today I'd be in Sing Sing by morning. The argument is invariably made to the owner that a percentage or fee basis is the only real and economical way of building a quality building, yet this same argument is denied to the sub-contractor by the men who would make it on their own behalf. Now, is the fee or percentage basis the way to build well and economically? I believe it is, but if it is why does it not apply to other trades than that of a bricklayer boss? What is the real answer?

What we need today in building contracts is the unwritten or "Lost Clause"—clause "X," as I call it—and some kind of an improved apparatus built along the lines of the old stereoscope—the little machine with the double lenses and duplicate pictures—so that you put the flat contract in and the machine shows everything standing out in the open; and as you look you will recognize here, there, and everywhere, hiding behind clauses, phrases, commas and semi-colons—what? *Just bunk!* Now, when the public, the architect, general contractor and sub-contractor, metaphorically speaking, all use this machine we will start the de-bunking process in real earnest.

And the "Lost Clause" to which I referred is as follows: "This contractor must be a competent, efficient, honest man; financially responsible and who is *known* to value his reputation *as such* above everything else in this world."

This is the clause that "de-bunks" a contract.

A "Sub" On Bunk

In respect to the matter of bunk, as referred to in Mr. Eidlitz's remarks above, a well-known "sub," who desires that his name be withheld for the moment, sends us the following rather terse comments on a building operation in general:

LOT OR PLOT—That portion of sand, rock, or loam that was stolen by someone many years ago, but by the use of nerve, surveyors and courts, has been bounded and parceled until it has become a thing of value and an income forever.

OWNER—That individual (or collection of same) who has the lot and wants a building on it. Before he (or

they) start, three supposed truths are impregnated in his or their minds. First: That Architects are not practical business men; that they receive their fees for really doing very little, and if it were not for the Building Department an owner would not need them. Second: That there are no absolutely honest General Contractors, at least the Owner has never met any. Third: The building will cost more than has been figured, more than the Owner has been told, and more than it is worth.

AGENT OR BROKER—That exceptional piece of the male or female of the species who, by inherent energy, slick tongue and ample pencil, proves to the purchaser that peculiar paradox: "Land has no real value without a building on it and a building is worthless without land to put it on."

Sometimes used to secure a tenant for existing structures, but more often employed to prove to the purchaser that he is buying a bargain, and to the seller that he is receiving more than the property is worth.

The means of PASSOVER from the man who has cash to the man that wants it.

ARCHITECT—A man (or company of men) who has or have spent the best years of his or their lives in studying the classics and working for a Beaux Arts prize and are then compelled to design on an impossible rectangular plot a building disproportionately high which, on account of demanded daylight, prevents true proportion; whose resplendent superstructure without base is apparently upheld by a large sheet of plate glass called the store front, and whose cornice is up so high that it is designed for the eye of the man in the street rather than for the building.

This animal is generally disliked by owners: First, because the price he quotes for a building is generally too low; and second, because the items required to COMPLETE a building are often omitted from the plans and specifications.

This profession will be a good one when Owners are convinced that Architects are worth their fees, which will only result when Architects learn the building game by other means than through the mouths of Builders.

PLANS—Those lines and figures that constitute the lay-out of a building, generally not very well drawn and often poorly printed, given to Contractors as FACTS, but most always void on account of notes thereon, the principal one of which is "Check and Verify all conditions and measurements at the Building."

The Architect's SOP to the Owner which very seldom works out accurately because somebody who was more artistic than practical "never thought of THAT."

Sometimes used by Mason Foremen to catch mortar droppings on; in fact the more mortar spots on a plan the more practically a building is built.

Often used in the best architects' offices to show and prove the high cost of inferior draughtsmanship.

SPECIFICATIONS—Pieces of writing which explain everything but the facts, used principally to cover architects' errors and to explain impossible things. The most contradictory documents ever executed by the hand of man and generally written by someone who desires to say something and does not know how to say it.

Principally noted for what was intended and not what was written. Made void by the clause "AS MAY BE DIRECTED" following pages of minute complete and semi-legal language of detailed directions.

Never referred to on a job until an error is made and then only used to place the blame on the architect.

The perfect specification has never been written; it exists only in the mind of the owner, where wrapped up in his thoughts is an ideal building which, on account of the frailty of human nature, lacks expression in language and fulfillment in fact.

A "Scrap of paper" as far as inferior contractors are concerned.

GENERAL CONDITIONS—Those 18 pages more or less in the front part of a specification, describing in detail the powers of an architect, which few estimators or contractors read and which no one believes. These are never used or referred to excepting in a lawsuit and then the attorneys, judge and jury do not know what they mean, can never understand them and therefore they are never admitted in evidence.

If buildings were specified in classes then GENERAL CONDITIONS might be useful, but as nearly all architects want first class buildings built at a second class price GENERAL CONDITIONS are not needed by first class builders and are not followed by second class ones.

"PRIVATE" conditions would be a better name for them, but to dignify them with the caption "GENERAL" is a disgrace to the "ARMY" of architects which writes them.

BOND—A piece of paper costing the owner 1% of the amount of the contract, which he pays to satisfy his conscience in two ways: First, because he is afraid the contractor has taken the job at too low a price; or Second, because he has not properly investigated the contractor to whom he has awarded the job.

If the contractor is honest and competent no BOND is needed; if he is incomptent and dishonest it will cost the owner more in loss of rent and interest on his investment before he settles with the bonding company and has his work completed than it would have cost to have had a reputable contractor do the work.

A protection which does not protect from the thing which is supposed to be protected, to wit: The owner's interest.

A bond is as good as the party bonded, no better, no worse: NOAH built a first class ark and did not furnish any BOND.

ESTIMATES—That conglomeration of figures compiled after long and laborious effort in trying to make the plans and specifications agree and the discrepancies of the sub-contractors' bids legitimatize the exact facts of the case.

An expression of opinion which never becomes a fact on account of atmospheric and various other conditions never the same. Estimates are principally based on HOPE. Hoping that the other man will not be lower; hoping that nothing has been omitted; hoping that you will win the job; hoping that you will make a small profit.

Those things demanded accurately by architects in

three days about something which has taken them three months to produce, generally inaccurately.

ALTERNATES—That bane of an estimator's life which is the most difficult thing to produce. Absolutely worthless, for comparison, to the architect, and which, when he gets them, he cannot understand; nor does he know what to do with them. Like the words IF and BUT, alternates are used only to condone errors or to explain "what might have been."

GENERAL CONTRACTORS—Those people who never know until they are dead whether they have made a success of business or not. Anybody can be a general contractor and generally the less he knows about the building business the more successful he is. General contractors are the real high life of a city; at least this word is continually shouted at them by everyone who ever had a dollar's interest in any building erected.

General contractors are of three classes: Good contractors are those who always agree with the architect and say YES to everything he demands and wants "whether especially shown or specified or not."

Bad contractors are those who request to be paid for legitimate extras and who endeavor to hold the architect and owner to their part of the contract.

Near contractors are those who drift into and then out of the game, but remain long enough to sting the subs, "put it over" the owner and make a dent in the "BAD" contractor's fair methods of honestly doing business.

A necessary evil who have to scratch to keep the "cootie" labor unions from biting them.

SUB-CONTRACTORS—Those poor devils who are always told by the general contractor they are high, and knowing they will be told this they submit estimates accordingly. These are the people who always lose money on every job but who somehow stay in business, and own and ride in automobiles while the general contractors walk. The most maligned part of the building industry. It always improves on architects' details by making changes in the mouldings, etcetera, and then regrets when the job is finished that it did not follow out the details in the first place.

That bunch which will talk $10.00 worth to save $2.00 and then spend $25.00 to make second hand work acceptable to the architect when first class work could have been done cheaper in the first place.

A bunch of IMPROVERS whose great slogan is "I did not figure that."

ESTIMATOR—One who spends a lifetime only to learn that the things that he did yesterday cannot be done today, for the reason that he is supposed to know not only the mind of the architect, the desires of the owner, the vicissitudes of his employer's employees, the fluctuations of the material market and the true meaning of the sentence "as may be directed" but be so gracious that he can take all the blame and get none of the praise.

A profession where accuracy is essential, yet by being accurate you never win a job.

A profession requiring the nerve of a gambler, the courage of a soldier, the bluff of a poker shark, the vision of a dreamer and the faith of a martyr.

A profession requiring three principal ideals, Faith, Nerve, and Hope, but the greatest of these is HOPE.

CONTRACTS—Something you work hard to get and which, after you get it, you wish you didn't have. Generally 15% to the good as far as the owner is concerned. A piece of paper with three or four signatures which is good if the owner has money and dies, and no good if he has no money and lives.

Not needed in writing between honest men, but sometimes used to prevent either party from changing his mind. The real value of a contract is determined by the contractor after he receives the final payment from the owner; if a profit is made it is a good contract, if a loss is the final result it is a bad one.

RUBBISH—That item which, if properly estimated, causes you to lose the job, and if not estimated causes you to lose your shirt. The bone of contention of "To who does it belong?" To who? It is that thing without which a building cannot be built, which nobody makes, nobody wants, and which costs more to remove than it does to collect. If it contains 10% of shavings it was made by the carpenter, and if 10% of dust it was made by the mason.

The only thing in a building which nobody desires to wrap up and take home.

There are never enough nails, hinges, or 2 x 4's, but always plenty of RUBBISH.

WATCHMAN—The policeman's best friend. Generally a horrible example of the grind of the building industry. The personification of honesty which even common thieves generally respect.

THE LESSEE—That party or those parties who hire the finished structure, insisting it is not the way they wanted it, not even what they expected and they can hardly use it to advantage, although they approved the plans, visited the building every day and compelled the owner to accede to their every whim and wish.

Paris Letter

The French, and above all the Parisian, architect has not found, since the war, much occasion for developing those problems to which he had become accustomed. The most common work in the architectural offices of Paris has been the apartment house of six or seven stories, with one or two flats on each floor for the well-to-do homes—three or four for the more popular quarters. For the rest of the work, an occasional villa in the country, and, infrequently, the alteration of a dwelling into business premises, or into a place of amusement; besides these, a few repairs and whatever else came to hand in the course of events.

Thus, with so many new dwellings, the town's capacity for housing found itself growing normally at the same rate as its population.

But the cost of building is such that at present it is impossible, in the construction of housing, to obtain a return on the investment of more than 2½ to 3 per cent. Under these conditions, private initiative has declined to interest itself in the building of dwellings. Moreover,

before the authorities had thought to forbid it by law, numerous dwellings had been altered into quarters for foreign banking houses or for cinemas, whose success was assured by popular patronage. Besides this, the reconstruction of the devastated regions has for the past four years absorbed the greater part of materials and labor available.

The public authorities have therefore been obliged—as in the greater part of the countries of Europe—to find a means of providing the less fortunate classes with dwellings at a very low rental. Legislation to this end has existed since 1906, and, in Paris at least, the philanthropic societies and *l'Office public d'Habitation à bon marché* (H. B. M.) have accomplished a most interesting work, as much from the social point of view as from that of architecture. To my mind, it is in these works that during the past ten years French architecture has manifested its vitality in the most serious and durable manner.

For the rest, certain financial advantages (tax exemption) and loans from the State allow these private societies to follow the example of cities which have created bureaus for low rent housing. This movement is developing, but, for the moment, it is above all the municipal bureaus which have undertaken the large operations.

Most of the low rent dwellings erected well before the creation of these bureaus, while indicating a certain progress from the point of view of hygiene, were considered before everything from the point of view of the number of inhabitants which they could house. But, since the creation of the bureaus, the most active of these, that of Paris and the department of the Seine, saw the danger of this conception. And it established a very simple and efficacious regulation. Instead of workers' dwelling houses in which light and air had been as much reduced as the rent, it decided that the prescribed dimensions of the courts, based upon the direct view from the windows, should be one and one-half times those allowed by the City of Paris for all buildings.

So we find in Paris a curious spectacle: the low rent houses are infinitely better lighted and aired than the homes of the wealthy, at least so far as the side courts are concerned.

Aside from this, the bureaus are constantly building on large areas, and it is here that the virtuosity of the French architects, from the point of view of the plans, has been given free rein and has found happy solutions.

The results of the regulation of which we have just spoken are that the area covered by buildings does not attain fifty per cent. of the plot. The courts are almost never completely closed. The minimum direct view from the windows is ten metres. All the rooms are directly lighted and ventilated. The height of the houses is about 18 metres.

As for the arrangement of the interior, it has been based upon the following principles: a large living room, a bedroom for the parents, a bedroom for the boys, another for the girls. As a matter of fact, these houses are reserved almost exclusively for large families. But there are other classes of families: elderly households, widows with or without children, young people living far from their families, for whom simpler quarters are desirable. The average arrangement of living quarters in one of these houses approaches the following proportions:

80%	4 rooms—1 kitchen 1 W. C.	(water, gas, electricity)
	3 rooms—1 kitchen 1 W. C.	(water, gas, electricity)
15%	2 rooms—1 kitchen 1 W. C.	(water, gas, electricity)
5%	1 room	one common watercloset and one source of water supply

In general, the *rez de chaussée* on the street is used for shops. A location is provided for an infants' nursery, and a visiting physician's office is attached to it. Other utilities comprise a laundry and sometimes a drying room. Garages for bicycles and baby carriages are always provided, as well as shower-baths.

The æsthetic expression of such a program is particularly interesting. The danger, when one is building low rent housing, is to fall into monotony, into a simple parallelipipedon pierced with regular holes. In such dwelling houses, where all the apartments are similar, it is impossible to set up a home possessing the complete originality of the individual house, but there must be sufficient latitude to give each household the sense that its own hearthside is not exactly like that of its neighbor, where the evening is often spent.

To avoid this stumbling block, the architects have few resources at their disposal, for the cost of building houses is a primordial question. However, the results obtained are altogether remarkable.

Since the number of stories is fixed at six, besides the *rez de chaussée*, a dominating outline can scarcely be obtained. But in utilizing bay windows, a liberty permitted by the building laws, a certain movement of the façade has been obtained. The color of the materials likewise gives a sufficient variety. Architects are recommended to contrive to create types of houses demanding the least possible maintenance. In addition, most of the façades are of rough stone (generally obtained from the demolition of the fortifications of Paris), of red brick, of white silico-calcareous brick, with some portions in cement, often ornamented with touches of red granite.

The architects are generally chosen in competition; the winner is charged with the execution of the group which was the object of the competition. But those who have thus acquired experience are becoming specialists, and, in Paris, *l'Office public d'Habitations à bon marché* has ended by establishing a staff of the first order.

Infrequently, for a group of buildings, all the architects collaborated on the same work. The result has been most remarkable, as much from the point of view of utility as from the practical aspect. But this was only possible among architects who were united by close bonds of friendship and purpose, a condition not difficult to meet in France, where the greater part of the leading architects in the competitions come from *l'Ecole Nationale des Beaux Arts.*

It seems interesting to say a word about the cost of such housing. In practice, it varies between 3,500 and 4,000 francs per square metre, built six stories high in

addition to the *rez de chaussée*. The same cost obtains for the courts. It would be useful to compare, in different countries, construction costs and, likewise, to compare the rents which—considering their income—might be asked of the occupants.[1] In a country like France, the amount of income spent for housing varies noticeably according to the region. A household of Parisian workers, before the war, rarely spent more than 500 to 600 francs per annum for rent. Many contented themselves with being badly housed for 300 francs. Today these rents have increased a maximum of but 75%, by reason of the rent laws. In the north of France, however, the weavers' households rent a small house for 3, 4, 5 or 6 francs a month.

[1] The interested reader may turn to the Report of the New York State Housing and Regional Planning Commission, reviewed on page 84 of the JOURNAL for February, 1924.

It is so, perhaps, that the industrialists seek to hold workers in their towns. But I am convinced that the French worker has not yet become aware of the importance of housing in relation to the health of his family. In this respect, the example set by the low-rent municipal housing bureaus will be fertile; children brought up in good environments will later instinctively seek them for themselves. They will consent, to obtain this object, to the necessary sacrifices of money, and they will expend upon housing a portion of their wages which, far too often at present, goes for unæsthetic or even unhealthy pleasures.

Here we see the considerable influence which architecture can have upon public morale and welfare, and it should make us proud of our profession.

February, 1924. G. F. SERBILLE.

The Secretary's Page

The Executive Secretary and the Secretary had a wonderful idea the other day. It occurred to them that the very best place to look for material for the Secretary's Page was in the Chapter reports. Here the Secretary would find the things the various Chapters were doing, would pick out the things of special interest from this or that Chapter which seemed noteworthy and spread them in the Page for the benefit of all. Let's see, there are 53 Chapters, and the reports would probably average not over two pages in general. Well, the Secretary reads rapidly, and to read 100 pages of interesting matter a month might not prove too heavy a burden. Incidentally, the Secretary remembered that some of the Chapters held but one meeting a year, and most of them probably eased up during the summer months. So the Executive Secretary promised to send them all on as soon as received.

But something has gone wrong with the reports. The collection received since last November totals the mighty sum of nine different Chapters. Please let me know, Mr. Chapter Secretary, if I have neglected to put your Chapter on the Roll of Honor in the following reports:

ALABAMA CHAPTER: Annual Meeting held at the Hotel Tutwiler, Birmingham, at one in the afternoon. Interest and activity in Chapter and Institute Work shown. Prizes at the Department of Agriculture, stimulating the Engineers to follow suit. A. I. A. Public Information Committee articles in the papers. (Fine business.) Committee appointed to see what the Chapter could do in an advertising campaign in the papers. A cheerful note throughout all the proceedings. Three pages.

CENTRAL ILLINOIS CHAPTER: Annual Convention, at Peoria. Business in the morning, a delightful luncheon at the Country Club, with the ladies, followed by talks from the First Vice-President of the Institute and Mr. Fox, and a memorable dinner at The Jefferson, with enthusiastic discussion following the speeches of the evening by James M. White and Mr. Frank E. Davidson. Page and a half.

CHICAGO CHAPTER: Reports of November meetings of Executive Committee and Chapter totaling five pages. Chicago has a pleasant habit of doing most of its business in Executive Committee, and at the Chapter Meetings having a worth-while guest of honor who makes the talk of the evening. I recommend it to those Chapters with a large enough membership to insure worthwhile meetings for the visiting speaker. The Chicago Chapter is on the job.

IOWA CHAPTER: A delightful seven page report of the annual meeting last Fall. Iowa holds but one meeting a year but it makes that one worth-while, a two-day session. The Executive Secretary-Treasurer of the Chapter has just issued a notice to all the Chapter members that exudes such a worth-while spirit that I am tempted to quote. After the announcement of the Committee personnels he says:

"It is earnestly hoped that we, as Architects and members of the American Institute of Architects, may make our organization more of an influence in the life of our various communities throughout the state during the coming year.

"This is a good time of year to take an inventory of our qualifications as Architects, of our purposes and aspirations, and of our relations to our fellow Architects. Let us take such an inventory and resolve to increase and improve our 'stock in trade' during the year 1924. Let us also resolve to take an increased interest in the Chapter organization and to assist in all possible ways, either by Committee work or by suggestions or otherwise. Your officers alone can accomplish very little of what we should accomplish without the cooperation or at least the moral support of the rank and file of the membership. Give some thought to what you think should be done by the Iowa Chapter and communicate those thoughts to your Chapter officers or the proper Committee men."

KANSAS CITY CHAPTER: Monthly reports come in with great regularity from this Chapter. Thanks, Mr. Secretary. Annual dues were set, after proper procedure, at $18 for resident members and $10 for non-resident

members. Interesting talks were given on other than straight architectural or Chapter business, such as landscape architects' work, sculpture and model making. One to three pages per meeting.

NEW YORK CHAPTER: November meeting with 79 members present. New York also does most of its work in Executive Committee. Held a Regional Conference in February. Has laid out a complete program for the winter which looks interesting and worth while. I have mentioned the attendance at the New York Chapter meeting because it would seem good to most of the Chapters. I notice, however, that it does not seem good to them and they are working over that difficulty like all the other Chapters. Three pages of terse items.

RHODE ISLAND CHAPTER: October meeting. Very brief; but one page. I judge a very valuable talk from Mr. H. H. Kendall on the Court House Competition and Institute matters. It too has an Executive Committee that works for the Chapter.

WASHINGTON, D. C., CHAPTER: Some delightful notices of meetings by the Secretary, Mr. H. F. Cunningham. And I am told that they bring forth the membership at the meetings. The Chapter has published a printed pamphlet containing the minutes for the year 1923. Since H. F. Cunningham is the Secretary you can imagine, possibly, what good reading this little pamphlet offers. And incidentally it shows results in the Chapter activity and interest that set an example to all.

WASHINGTON STATE CHAPTER: Reports come in regularly. The last is the 295th and Annual Meeting. Its close touch with Canada has brought up the suggestion that the Schedule of Charges be made a matter of law with them as it is rapidly being made throughout Canada. The meeting was an all-day session. Mention made of a valuable special fund, and it might be interesting to know how it happened. Reports on the Small House Service Bureau and its progress, relations to draftsmen, and others were read. It was voted that a simple ceremony should be adopted by the Chapter giving the outgoing President a gavel inscribed with his name and the term of his office. Some very delightful talks on quite varied subjects closed the meeting. Three pages.

So much for the individual reports as received. I hope in the future the Secretary will have more to cull from. Thanks to the noble few who have not forgotten that part of each Secretary's job is the forwarding of minutes to the Octagon. Please note (See Item 3) that all communications to the Secretary should go to Washington unless specifically asked for otherwise.

One notes in running through the minutes that there is still an undercurrent of discussion about the schedule of charges and the proper fee, and a surprisingly large amount of discussion about irregular competitions for public and private work. This latter bone of contention is not peculiarly architectural, but is even more prominent in some parts of the field of our near relations, the engineers.

The Secretary attended the Annual Convention of the Minnesota State Convention of Architectural and Engineering Societies. It was discussed there quite thoroughly. The fact that Public Boards must do their own selecting and cannot delegate such authority to any other body, even if they would, was clearly brought out. Also the fact that Architects or Engineers should be judged as to their ability by their peers. And a resolution was passed authorizing the Board of Directors of the Federation, if on further study it was deemed advisable, to offer the free services of architects or engineers to any public body in the state for the purpose of passing on the qualifications of all architects or engineers applying for work and thus giving such public body a reliable list of applicants from which to make their choice. A thought worthy of study by the different Chapters and the Institute.

Industrial Relations

There has been a good deal published recently in professional journals with regard to the excellent work being done by the Associated Tile Manufacturers in their scheme of training tile setters. Under the guidance of Mr. F. W. Walker the admirable programme of the tile manufacturers has been under way for some years. It includes a scheme of scholarships to apprentices who are trained at one central school and an admirable system of text-books developed from the experience gained by that training. At the recent meeting held in Washington under the auspices of the Federal Bureau for Vocational Training the developments of this particular training of craftsmen in the tile industry were the most suggestive presented to the delegates representing all the crafts in the building industry.

MR. D. Knickerbocker Boyd of the Committee on Industrial Relations is making a trip along the west coast during the month of February and consequently will be able to meet with groups of architects and contractors in various coast cities. As a consequence the Congress scheme will once more be presented for the consideration of the building industry in these cities. The Chairman hopes that the good example of Portland and Seattle may be followed by San Francisco and Los Angeles. It must be recognized that the problem is difficult because of the spread of the open shop movement. In those cities of the East where the apprenticeship training scheme has been started under the auspices of the Congress movemust be recognized that the problem is difficult because of crafts, and it is difficult to see how unorganized workers in open shop towns can be made to co-operate effectively. It is, however, so generally recognized by the building industry that one of its chief problems for some time to come is going to be the matter of training competent craftsmen, that any plan that can be devised to attain this result ought to be encouraged.

AN interesting move has recently been made by the Credit Association of the Building Trades in New York. This Association for the last eighteen years has confined its activities to the question of financial credits as between contractors and sub-contractors. A group of leading architects in the city was recently approached by the builders with the suggestion that the functions of the Credit Association be enlarged in a direction which

would be of importance to the architects. The suggestion was made that not only shall investigations and reports be issued as to the financial credit of contractors and sub-contractors, but also as to the integrity, ability, plant equipment and general skill of contractors. For this purpose, of course, the co-operation of architects is necessary. The plan has seemed to meet with the approval of the groups of architects consulted, and quite a number are joining the organization for an experimental year during which there is to be interchange of information along these new lines. If the experiment works the plan will probably find active support in other communities.

THE Labor Publishing Company in England has recently issued an extremely interesting book entitled *The Builder's History,* by R. W. Postgate, dealing with more than a century of the organizational activities of the building trades in England. This historical review of the development of craft unions in England is very suggestive. The building world in England of almost a hundred years ago had the same difficulties which are met with in this country today. The Chairman of the Committee on Industrial Relations believes the book merits a special review so as to call it to the attention of the members of the Institute, and by next month it is hoped the JOURNAL may publish such a review.

R. D. K.

Registration

The bill introduced by the Members of the Washington Chapter of the American Institute of Architects, for the consideration of the Senate and House of Representatives, creating a Board of Examiners and Registrars of Architects for the District of Columbia, is a carefully drawn measure. The argument presented by the Washington Chapter in favor of its enactment is rather conclusive and presents logical reasons for the adoption of good registration laws in general.

While it would seem to be better protection to public safety if the design and superintendence of all classes of structures, including bridges, buildings, etc., should be confined to registered architects and engineers, the difficulties in the path of such legislation make it advisable simply to protect the use of the title "architect" or "engineer." While civil action at law in cases of personal injuries holds against the owner of the structure, criminal action seems to fail because of the difficulty of proving criminal negligence or intent. In the case that an owner does not employ a registered architect or engineer to plan and supervise his building he should be held criminally liable in case of personal injury or loss of life. The burden of proof as to the competency of such person as he may employ should rest on the owner by law.

If the owner does employ a registered architect or engineer to design and supervise construction, the criminal responsibility should rest on such architect or engineer. The owner is relieved in such a case because the professional man employed by him has had his qualifications passed upon by men presumed to be competent.

The fact that there is a local authority conducting governmental inspection should in no way relieve the owner or the architect or engineer from criminal responsibility in case of failure in construction except where such local authority becomes a party to criminal negligence by approving faulty structural design aside from supervision.

While such laws as that proposed for the District of Columbia do not and cannot place criminal responsibility, they can open the way to a definite procedure by which such responsibility may be placed. Registration laws surely involve a very serious responsibility. The findings of such Boards, acting under the law, constitute a menace to or protection of life. When a certificate to practice is granted and incompetency of the person to whom it is granted follows and results in loss of life, the Board is at least morally responsible to an extent because it is supposed to be competent to pass judgment on the ability of others. Incompetency in medicine is hidden in the grave, in law it is reviewed and checked to an extent by the courts, but in architecture and engineering it is directly placed and broadcasted to the world.

WILLIAM P. BANNISTER, *Chairman.*

Competitions

The Government of Australia seems to have set an unprecedented example in announcing that it proposes to compensate the competitors who prepared submissions for the competition for the design of the Permanent Parliament House at Canberra. It was in July, 1914, that the competition was announced but it was withdrawn in September of the same year owing to the outbreak of war. It was revived in August, 1916, but was indefinitely postponed in September of the same year. Now the government declares its policy, in respect to Canberra, to be one of awaiting more favorable conditions, but it also proposes to make a sum of money available for compensating those contributors whose work on the competition had involved an expenditure of money. It has accordingly notified the competitors of its intention and has formulated a plan for alloting compensation. The method of procedure has received the approval of the Australian Institutes of Architects and the example ought to be one toward which the architectural profession may point with appreciation and gratitude.

IN THE case of the announced competition for the Palace of Justice at Cairo, Egypt, the Royal Institute of British Architects has forbidden its members to participate. On learning of this action, the American Institute of Architects, through its Secretary, cabled a request that the program be changed to accord with the International regulations for competitions, but was advised that, as the invitations had been issued, no changes in the program were possible. The Institute therefore advises its members against taking part in this competition.

THE NEW COURT HOUSE COMMISSION created by the Legislature of Rhode Island has held the competition for the new Court House in Providence, and it is announced that the winner is the firm of Jackson, Robertson & Adams of Providence. The second prize went to John M. Howells and Raymond M. Hood, Associated, of New

York, and the third prize to Eleazer B. Homer & Gordon Henshaw, Associated, of Providence.

Under the terms of its creation the Commission had not the power to include in the program the usual clause by which the winning of the competition automatically concludes the contract for the design, but the owner agreed to allow no one to whom it would not be willing to award the commission to enter the competition. The General Assembly is the final authority.

The report of the jury praises the high excellence of the submissions. The architectural advisor was Mr. Henry H. Kendall, P.P.A.I.A., and the secretary of the commission, Mr. John Hutchins Cady. The members of the jury were Messrs. Jesse H. Metcalf, J. Jerome Hahn, William Emerson, Charles Butler, and Norman M. Isham.

WILLIAM L. STEELE, *Chairman.*

Contracts

The Committee cannot of course report any such range of activities as characterized the earlier work of the Committee, when the uniform contract documents were in process of being formulated. It can, however, say that it is kept fairly busy in answering requests for interpretation of the provisions of the documents. These come from all over the country, and from architects who are members of the Institute as well as from those who are not. The tenor of the questions is very friendly, indicating that the wide use of the documents has proven generally satisfactory.

Changes in certain provisions of any standard documents must inevitably occur in contracts drawn by individuals. The Chairman of this Committee, undertaking its work as he did, was somewhat unequipped by previous experience, but he is thoroughly convinced of the value of the work done by those Institute members who framed these documents and of the very wonderful manner in which they succeeded in making a document so widely acceptable. The value of their service to the Institute, and hence of the service of the Institute to the architects in general, is inestimable. Later, the Committee hopes to offer a digest of some of the more interesting questions raised during the year as they have involved provisions of the documents.

EDWIN BERGSTROM, *Chairman.*

Public Buildings

On 30 January last there was introduced by Mr. Smoot in the Senate a bill (S.2284) providing for the construction by the Public Buildings Commission in the City of Washington of buildings for the Bureau of Internal Revenue, Department of Justice, General Accounting Office, Department of Agriculture (completion of present main building on the Mall), National Archives, General Supply Committee, Department of Commerce, Department of Labor, Interstate Commerce Commission, and other various governmental activities. The bill authorized the Public Buildings Commission to make preliminary studies of needs, designate sites, and allocate the preparation of plans, execution and supervision, among "such qualified agencies of the Government" as it may deem desirable, the plans to be subject to the approval of the Commission.

The sum of fifty million dollars is asked for, not more than ten million of which is to be available in any fiscal year.

Competitions were held for three departmental buildings a number of years ago, some 20 architects participating in each of the competitions, representing the work of 60 architects in all. These were examined by juries appointed by the Treasury Department and awards made to distinguished architects in each case. While the conditions have changed somewhat and the same buildings in each case will probably require further study, it is to be hoped that the Commission having in charge the expenditure of these funds, if appropriated by Congress, will recognize the moral obligation to connect their procedure as closely as possible with the original movement at the point at which the original procedure ceased functioning.

MILTON B. MEDARY, JR., *Chairman.*

Pre-Convention Notes

NOMINATIONS. For the office of President, Mr. Milton B. Medary, Jr., of Philadelphia has been nominated by members from the following Chapters:

CHICAGO: Henry K. Holsman, G. C. Nimmons, Clark C. Wright, Richard E. Schmidt, Martin Roche, J. C. Llewellyn, Robert C. Berlin, John A. Armstrong, John A. Holabird, Hugh M. G. Garden.

IOWA: Eugene H. Taylor, W. J. Brown, Harry E. Hunter, C. B. Zalesky, Charles B. Anthony, Herbert B. Rugh, Seth J. Temple, P. T. Burrows, R. J. Clausen, Arthur H. Ebeling, William L. Steele.

KANSAS CITY: Albert S. Owen, Arthur D. James, Wm. H. Sayler, Courtlandt Van Brunt, Arthur H. Buckley, Elmer Boillot.

NEW YORK: Charles Butler, Robert D. Kohn, Clarence S. Stein, Frank E. Vitolo, Frank H. Holden, Burt L. Fenner, Teunis J. van der Bent, Lionel Moses, George S. Koyl, Gerald A. Holmes, John A. Thompson, H. Van Buren Magonigle, James Otis Post, William Sydney Wagner, William S. Post, D. E. Waid, R. H. Shreve, William F. Lamb, Theodore E. Blake, C. Grant LaFarge, Louis Ayres, Henry Bacon, Donn Barber, Jerome R. Allen, Frank Goodwillie, Wm. Edgar Moran, Ely J. Kahn, Wm. Adams Delano, Julian Clarence Levi, Albert Buchanan, Egerton Swartwout, J. M. Montfort, Electus D. Litchfield, Arnold W. Brunner, Albert S. Gottlieb, John A. Gurd, R. H. Hunt, Joseph H. Hunt, Bevan Jones, R. T. Walker, Andrew C. McKenzie, Paul Gmelin, Henry C. Hahn, Leroy P. Ward, J. Lawrence Aspinwall, Fitz-Henry Faye Tucker.

NEBRASKA: Charles W. Steinbaugh, Frederick W. Clarke, Frederick S. Stott, Louis W. Smetana, Thomas R. Kimball, Harry Lawrie, Edwin B. Clarke, John McDonald, J. D. Sandham, Alan McDonald, James T. Allan, N. S. Wallace, George B. Prinz, H. A. Salisbury, Mark M. Levings, L. J. Prestwich, Charles A. Carr, N. R. Brigham, F. A. Henninger, James R. Webster.

OREGON: O. R. Bean, Ellis F. Lawrence, Frederick S. Allyn, John V. Bennes, Charles D. James, Morris H. Whitehouse, W. G. Holford, W. R. B. Willcox.

PHILADELPHIA: William J. H. Hough, Howell Lewis Shay,

Edward E. Hendrickson, G. Edwin Brumbaugh, Wilson Eyre, Percy Ash, John F. Harbeson, William D. Hewitt, Albert Kelsey, Almeric C. Howard.

SAN FRANCISCO: J. S. Fairweather, Harris C. Allen, Walter D. Bliss, Albert J. Evers, George B. McDougall, Earle B. Bertz, John Reid, Jr., Morris M. Bruce, Wm. C. Hays, Edwin J. Symmes, E. G. Bolles, George W. Kelham.

ST. LOUIS: John Lawrence Mauran, Ernest C. Klipstein, Wm. A. Hirsch, E. J. Russell, Walter L. Rathmann, J. N. Watson, Wilbur T. Trueblood, Louis La Beaume, Eugene S. Klein.

WASHINGTON, D. C.: Delos H. Smith, Frank Upman, R. F. Beresford, L. Justement, J. R. Marshall, Harry F. Cunningham, George O. Totten, Jr., T. A. Mullett, Arthur B. Heaton, J. Wilmer Smith, Horace W. Peaslee, Ward Brown, P. C. Adams, Julius Wenig, L. M. Leisenring, Joseph Younger, William Douden.

WASHINGTON STATE: A. F. Menke, W. G. Brust, C. A. Merriam, David J. Myers, F. A. Narramore, Charles H. Alden, James H. Schack.

For the office of Treasurer Mr. D. E. Waid has been nominated by the above members of the Kansas City and St. Louis Chapters.

FOR the office of President, Mr. D. Everett Waid of New York has been nominated by members of the following Chapters:

NEW YORK: Harvey W. Corbett, Edwin H. Denby, Chester H. Aldrich, John V. Van Pelt, H. O. Milliken, Walter D. Blair, Albert E. Flanagan, Chas. A. Platt, Philip Sawyer, F. L. Ackerman, Ely J. Kahn, Wm. F. Lamb, Wm. S. Post, W. Sydney Wagner, Chas. Ewing, Jerome R. Allen, Lyman A. Ford, Wm. O. Ludlow, Benj. W. Morris, Lionel Moses, Lawrence G. White, Walter B. Chambers, Julius Gregory, Thos. Hastings, Theo. E. Blake.

PHILADELPHIA: Clarence W. Brazer.

CHICAGO: F. E. Davidson, Joseph C. Llewellyn, H. B. Wheelock, Chas. E. Fox, Emery S. Hall, Ralph C. Harris, Leon E. Stanhope, Robt. C. Ostergren, H. H. Waterman, Chas. H. Prindeville, Clark C. Wright, H. W. Tomlinson, J. M. Hoskins, Elmer C. Jensen, John E. Youngberg, N. Max Dunning, Arthur Woltersdorf, Geo. W. Maher, Robt. C. Spencer, John R. Fugard, Benj. A. Horn, John A. Nyden, G. P. Lagergren, John W. Weiss, Morris G. Holmes, Geo. W. Carr, M. C. Chatten, E. H. Clark, I. K. Pond, Philip B. Maher, Albert M. Saxe, Howard L. Cheney, Robt. G. Dwen, Gardner C. Coughlen, F. J. Teich, J. C. Bollenbacher, C. H. Walcott, Howard Shaw, Geo. G. Elmslie, H. V. Von Holst, J. S. Van Bergen, A. S. Pashley, Pierre Blouke, F. J. Ellert, S. M. Peterson, Russell S. Walcott, E. H. Bennett, Clarence W. Farrier, R. C. Llewellyn, Jos. Nadherny, Scott C. Dyer.

CENTRAL ILLINOIS: H. E. Hewitt, F. N. Emerson, Warren W. Day, B. L. Hulsebus, L. Eugene Robinson, Robt. J. Hotchkiss, Mark L. Whitmeyer, Geo. H. Davis.

NEW JERSEY: E. H. Fougner, Jas. O. Betelle, Harry T. Stephens, Warren C. Pattison, Geo. S. Drew, Marshall N. Shoemaker, Neil J. Convery, Gilbert C. Higby, Hobart A. Walker, Bernard E. Jamme, Henry Baechlin, Seymour Williams, J. C. Van Vlandren, Frank A. Cutler, F. W. Wentworth, Fred J. Vreeland, Cornelius V. R. Bogert.

BROOKLYN: Frank J. Helmle.

Public Information

The Committee has met with a most encouraging response from several Chapters in the matter of local newspaper publicity.

BALTIMORE: Articles of the greatest interest are still being published in the Evening *Sun*, mostly written by Mr. John Henry Scarff.

DAYTON: "The Architects' Corner" of the leading Dayton Sunday paper is due largely to the activity of Mr. Walter G. Schaeffer and to the journalistic efforts of members who have written articles entitled *Charm in Design and Atmosphere, An Architectural Tour of Dayton, American Architectural Heirlooms, Fitting the House to the Site, Home of the American Institute of Architects,* with a cut of The Octagon House, *Architecture in Your Own City, Selecting a Home Building Site,* and one describing the typical architect's drafting room. All of these articles are attractively illustrated.

The Chapter has also arranged for a series of illustrated talks by representatives of the various manufacturers whose products enter into buildings. The Chapter has under discussion the compilation of a Chapter Cubiture book in which will be recorded all cost data on all work done by members, the information to be open to all members for guidance in preparing estimates.

SCRANTON - WILKES-BARRE: Sends in a valuable set of clippings, some of which relate to Institute material and some to that of local authorship.

DAYTON, GEORGIA, SOUTH CAROLINA, MONTANA, NEW YORK, MICHIGAN, ALABAMA, SCRANTON-WILKES-BARRE, COLORADO, SAN FRANCISCO, NORTH CAROLINA, SOUTHERN PENNSYLVANIA and PHILADELPHIA are publishing Institute material so that it has been disseminated throughout the country. The Committee has received most encouraging reports, for some Chapters have found the material so well accepted by the press and public of one part of their territory that they have obtained simultaneous publication by another newspaper in another part of the state.

NEW YORK: Mr. William Harmon Beers of New York City has arranged to broadcast a series of talks on Architecture. We have no knowledge of this having been tried elsewhere, save in London, but would like to be advised. If it were done from some of the Central, Southern and Western broadcasting centers, information could be disseminated very broadly. The Public Information Committee has made definite arrangement with a paid publicity agent, in conjunction with a similar move by the Architectural League of New York, the same agent being used.

KANSAS CITY: Has been making a drive to induce newspapers to mention names of architects of whose works they publish reproductions or notices, and has interested itself in the Lathrop Trade Schools, where boys study the intricacies of our modern building industry. Mr. Ernest O. Brostrom, the energetic Chairman of the Chapter's Public Information Committee, has also sent out a request for speakers for the Trade and High Schools.

MONTANA: Has held a Competition among members for small country schools and intends to produce a program with drawings and bills of materials which they will send to the Board of Health and State Board of Education for approval. Thereby they hope to improve the character of country schools. They expect to hold their summer meeting in Missoula and at that time to

have an exhibit of drawings by architects of the State, it is reported.

OREGON: Is taking active part in the Association of Building and Construction, especially in regard to their Guild of Handicrafts, apprenticeship, and a Code of Ethics for the Building Industry.

VIRGINIA: Has made an effort to arrange lectures for the public schools in Richmond.

SAN FRANCISCO: Is securing publication of Institute material at such times as the newspapers have space, and will hold an exhibition at the Bohemian Club 7-12 April. There has been no exhibition since 1916 and the local Club and Chapter intend to make this one representative of the best work of the profession.

ST. LOUIS: Has initiated activities for the formation of a Small House Service Bureau, and has been active in the St. Louis Building Congress of which Mr. George F. A. Brueggeman, a Chapter member, is President.

ARKANSAS: Is establishing a studio of local draftsmen who may work out the Beaux Arts Society problems.

BUFFALO: Has secured quarters for Chapter use known as the "Rectagon," and has installed an atelier which will do the Beaux Arts Society problems.

COLORADO: Has been successful in obtaining publication of notes about its members and their activities.

CONNECTICUT: Has had articles printed from time to time in the *Commercial Record* and other local papers. Its Committee on Legislation is working on a bill for state registration.

TOLEDO: Reports an interesting ordinance passed in that city, requiring the payment of an annual tax of twenty dollars or more for architects. No plans or specifications will be approved by the Building Commissioner until the tax has been paid.

UTAH: Has arranged an exhibit to be shown in connection with the various Chapters of the eighth and ninth districts during early February at Los Angeles and in early March at Salt Lake City.

WASHINGTON, D. C.: Has interested itself in the enactment of a registration bill in the District of Columbia. The Home Beautiful Section of the Washington *Post*, created through the activities of the Chapter's Public Information Committee, has been so successful that the paper is to increase it to an eight-column section and has asked Mr. Cunningham, the Public Information Chairman, to furnish weekly articles on the Design and Building of the Home and the Treatment of the Home Grounds.

It would be of the greatest use to the profession if each Chapter would organize a "Vigilance Committee" to watch for references to architects' work in which their names are not mentioned. The Committee could then bring the matter to the attention of the editor and some progress might be made in awakening the public to a realization that the architect has a right to such notice.

With the special approval of the Board of Directors of the Institute Mr. James T. Grady has been employed as publicity agent for the forthcoming Convention. Mr. Grady has in hand the publicity for Columbia University, the American Engineering Council, the Carnegie Endowment for International Peace, and others. He also had charge of the publicity for the University of Louvain.

JOHN V. VAN PELT, *Chairman,*
126 *East 59th St., New York City.*

The Development of Washington

In the November, 1923, issue of the JOURNAL there was published a statement concerning the organization of the Washington Committee of 100, whose object was a study of the needs and the growth of the Nation's Capital. The Washington Committee has just issued its first report and from the section on "Architecture and Its Relation to the Nation's Capital"[1] we quote the following:

The General Situation

It might be presumptuous to say that Washington is now the most beautiful capital city, but it is not presumptuous to say that there is no reason why Washington may not become the most beautiful and the most convenient. Of all the world capitals this one alone is distinctive in having a really great preconceived, coordinated plan for the grouping of its public buildings with all the needed setting of avenues, plazas, parks and mall.[2] The greatest handicap that Washington struggles against is the negative attitude toward æsthetic considerations—the wide latitude given for attacks upon the great plan, the unwarranted departures from it, the lack of positive restraining or prescribing authority, the substitution of so-called "common sense" for technical knowledge and architectural ability.

For any real accomplishment toward the ultimate greatness of the city—real civic greatness—certain general prerequisites are submitted:

(a) That, if Washington's primary purpose is to be the national capital and, as such, an age-long expression of American ideals, every possible means should be taken to prevent the erection of any structure—public, semi-public or private—which will, by virtue of position, construction or design, detract from the appearance of the city.

(b) That, if the capital's buildings are to qualify as national monuments by which our culture and art understanding will be judged, they should be placed only in the hands of masters—not men of average training, but the ablest men in their profession; that adequate compensation, comparable to private practice, should be paid architects in Federal employ to attract and hold men of high ability; that appointees to such named technical positions shall be men of sound professional training.

(c) That, if the city is to show a well-balanced architectural development, private buildings which constitute the greater part of the city's construction should be entrusted only to trained men; that there should be enacted a carefully considered Architects' Registration Law such as half the states have already passed for their own protection, such as is proposed for engineers and such as maintain the standards of medicine and law. Such a Bill has already been introduced in the Senate of the United States [S-933].

[1] Horace W. Peaslee, *Chairman*; James Rush Marshall, William D. Hoover, Walter G. Peter, John Temple Graves, John Poole, L. P. Wheat, Jr., Frederick Brooke.

[2] The Committee has unintentionally overlooked Canberra, the new capital of Australia, which has a plan basically more far-reaching than that of Washington.—EDITOR.

(d) That to raise the standards of private building and to prevent a "boomtown" appearance in the national capital, the full force of every Government agency, of all financial interests, of educational publicity and of nation-wide moral pressure should be exerted to impress upon private interests their responsibility to the nation; and that the work begun by the local architects in forming a co-operative Architects' Advisory Council, paralleling with private buildings the work of the Fine Arts Commission with public buildings, should be extended in co-operation with the Commission.

(e) That supervision, co-ordination of effort and continuity of policy is essential to the development of a great plan; that the Commission of Fine Arts, composed of some of the ablest men in the professions of architecture, landscape architecture, sculpture and painting, all of whom have given largely of their time and service without compensation for a dozen years, have demonstrated to the satisfaction of their professions their ability to produce results worthy of the nation; but limited advisory powers cannot be productive of the best results unless supplemented by some positive authority.

Therefore, it is believed that the time is soon approaching when a central supervisory planning authority should be set up which can employ as needed for positive and constructive effort the ablest men of the country, men equal to those who served so well under the McMillan Park Commission of 1901.

The Architectural Side of Certain City Problems

The divers needs of Washington are covered in detail in companion reports, but the following brief resume, taking for granted a great many fundamentals, calls attention to certain architectural elements of these subjects, as expressing in a nation's capital a nation's calibre.

Schools: Americans are essentially a "practical" people. If we are again to have a "working appreciation" of the Fine Arts, which was considered an essential part of a gentleman's education in Jefferson's day, we must acquire it subconsciously. Therefore, schools which reach the most impressionable age should be more than mere brain factories. Washington has not even enough essential plants. Nothing will go farther in helping to raise the standards of taste in the private buildings of the capital than instilling an appreciation of good architecture into the rising generation.

Parks: Our natural parks surpass those of every other capital, but we lack fine public gardens with monumental park structures equal to those of Rome, Paris, Vienna and other Old World cities. Washington has in the Mall a great opportunity for the creation of a really fine formal park, but at the present rate of progress it will take many years to complete it. Washington has shown the world for several years two wings of its only field-house for sports without its connecting center. Such a dilatory program does not seem up to our national standard of doing things.

Streets and Highways: In-town avenues demand formal treatment: picturesque sections call for informal treatments. Yet we find on our main streets, contrasting architectural and landscape vagaries, various types of patent fencing or balustrades, high terraces and sunk basement entrances: in the suburbs, where such variety might add interest to detached houses, set among old trees, we shoot the street lines with a transit, cut down the trees, scoop off the hills and fill the valleys. The world is literally turned upside down.

Washington can never evolve such distinctive residential sections as Roland Park, Forest Hills Gardens, the Country Club District, or any one of a hundred other well-known splendid developments from Back Bay to Berkeley unless something is done to save fine settings for residences.

Metropolitan Extensions: Today it is easy to foresee a great metropolitan extension into Maryland and Virginia. The architectural concern for both safety, convenience and appearance is early co-ordination of State and District zoning and building regulations to prevent the repetition in Greater Washington of earlier errors beyond Florida Avenue.

Waterfront: In the cities of the Old World the most beautiful treatments are along the waterfronts—the Bay of Naples, the Seine, the Arno, the Bosphorous, at Venice and Geneva. Washington has as great opportunities as any other capital and no impossible conditions to meet. From Budapest, Algiers, London, can be drawn ample precedent for treatments combining the practicable and the beautiful. Likewise, in the matter of bridges, we should regard noble precedent. A bridge is more than a street extension, and an inadequate approach may injure a noble structure. For lack of adequate planning in the case of the Francis Scott Key Bridge approaches we have already forfeited one of our greatest opportunities.

Housing: The national capital is being largely developed by speculative interests for a quick return, with monotonous, undesigned, repeat-type row fronts which stamp individuality out of human beings and mediocrity upon sections. There is no need for such imposition on the nation's capital or upon its residents. Variations in roof and parapet lines; in porches, terraces and hooded entrances; in court treatment and set-backs—all are feasible and of inconsequential cost. When individual cities can correct such evils, have the people as a whole no protection?

Industrial Development: Stores and factories are necessary, but they also should be subordinated to the idea that this is the nation's capital—the prime purpose of which is to be a noble seat of government. Every known industrial structure is capable of architectural treatment, so that in its very mass, simplicity and proportions, it can be made imposing, or simple and unpretentious. If promoters lack sufficient pride in their city to recognize such conditions, they should be prevented by law from intruding unsightly utility structures on the streets and in the vistas of the capital.

Zoning: Power should be extended to protect Federal buildings or prospective sites from encroachment on grounds other than public health and morals. When definite projects are long in contemplation, it is indeed short-sighted to allow Federal sites to be absorbed by private building operations or made prohibitive in cost by increased valuation. It is equally short-sighted to build a great monument, imposing in its placement, and then to allow encroachment in the immediate vicinity. It is amazing to think of a great commercial building across the street from the Capitol; of an apartment disturbing the setting of the Lincoln Memorial; of a costly panorama park with outlook blocked by an apartment house; of ugly office buildings breaking the continuity of a proposed executive square.

What American sojourning in Rome but has marveled at the majesty of St. Peters, its dome rising supreme above the city; and returning home has not thrilled again at the dome of his own Capitol radiant against the dark

sky! Yet we are about to throw away our birthright for a mess of pottage, for nearer to the Capitol creep the tall buildings which will soon break the broad skyline above which the dome now stands supreme. Cannot measures be taken through the Zoning Commission to prevent such encroachments?

Federal Buildings: Since the capital must house the departments of the government, it has a unique opportunity to develop the definite plan for great administrative groups which the McMillan Commission wisely evolved from the L'Enfant Plan. Propinquity one to another of the government offices would make for co-operation and the treatment as a whole would be an imposing example to other cities. Although plans have long been prepared for the new homes of the various Departments, the group developments have been at a standstill and the Departments in question have taken root elsewhere in scattered buildings of no great merit and in no way part of any general scheme, at a rental cost which would go a long way toward the construction of government-owned buildings. It would indeed be an unfortunate outcome if the offices of the government were to remain indefinitely in second and third-rate structures with nothing of the dignity and distinction, the monumental expression of large affairs that should attach to Federal buildings and distinguish them from buildings for private purposes. And there is a scathing indictment of small vision in the invasion under cover of war-time needs, of one of the nation's most noble structures, the Lincoln Memorial setting, with two huge concrete office buildings protruding their unsightly "gridiron" across the roadways of the Mall. Government buildings should be provided as needed according to a definite plan and under a definite supervision to prevent repetition of either over-ambitious or shamelessly ignoble structures.

A Capital Exposition

Some or all of the foregoing may seem very involved and complicated, but the idea may be put in more tangible form by comparison of a capital city to an Exposition. Those who have seen great Expositions cannot but recall the appeal of their unity and beauty. Back of the idea were two fundamental factors: first, a great scheme of co-ordinated development; second, the collaborative effort of able men. The world comes to witness—not primarily the mere exhibits but the marvelous beauty of the great composition. Can it be "That none of all our blood shall know the shadow from the substance"? Is it not reasonable that we should devote as high talent and as careful study to the enduring capital of our country as to our phantom cities?

The Editor's Note Book

Those to whom philology has offered such a fascination as it has to me may well consider that in the not too far away future it will become ever so much more interesting than it is at present. That is, provided the records of our rapidly changing language are preserved in any form adequate for such study. Indeed, it seems difficult to imagine a field that will be richer. Not only do new words tumble upon us with baffling rapidity but, what is more important, the meanings of words are being stretched and distorted until it scarcely seems possible that we can longer communicate with each other with any degree of accuracy. What is left for the poor human who walks the streets, or rides in a public conveyance? His eye is assailed with the cunningly disguised propaganda fashioned by the hired purveyors of what they call ideas, and with the impertinence and the importunities of the makers and sellers of wares, to a point where he may well be excused if he declines to give credence to any form of words. Perhaps it is because of the dreadful word fatigue that settles upon us that Wells, in his last story of an imagined Utopia, banishes the spoken language altogether. The Utopians of his dream speak with one another telepathically and thus are able to understand their English and French visitors with equal facility. And so one sighs as one reads, and even as one writes. No newspapers, no linotypes, no rotary presses! Ah!

A forcible reminder of these things was the sign recently noted in Virginia where the enterprising Jobinson made it plain that within his ice-cart there reposed cakes of "Super Cooled Ice!" This, of course, means that he had been obliged to go Smones one better than "Colder Ice," and that Smones had been prodded by Rith, who offered "Cold Ice." Such are the simple chains of events which so rob words of their meanings and so devaluate the language that one is not infrequently dismayed. For, be it noted, the drowsy effect of it all is to lower all appreciation of quality, of true value, of intrinsic worth, of desire for simple honesty of statement, until that business standard which lazily accepts its unmoral fate as inevitable permeates and destroys.

Not long ago I noted that a progressive young firm of carpet cleaners announced that they "Cleaned Carpets Clean," while there is a legend on a prominent public building in Cincinnati which informs that it is the purpose to mete out "equal and exact justice to all no matter what their station." As a piece of tautology, that is hard to beat, but as a reminder of what has become of our one-time concept of justice, it is not comic by any means.

Architecture and the arts do not escape, for indeed the word art has so long been taken over for commercial purposes that its use is generally more canny than convincing. Perhaps one of the best examples of this dreadful game of dressing up words in the uniform of business is found in a pamphlet recently issued by the White Star Line. Seldom has such a mess come out of a print shop. It was designed to glorify the liner *Homeric* and was evidently concocted in the marvelous brain of one of those beings known as a "copy writer." But the smear of the business superlative and the slobber of the parvenu were never better exemplified. Here is the description, if you please, of the first class dining room:

"Next to the public rooms on the boat deck the most commanding apartment in the *Homeric* is the first class Dining Saloon, situated on D deck, amidships. The distinguishing feature of this room—which has seating capacity for 500 persons—is the lofty central portion, with a great inverted dome of crystal pendants, reflecting in prismatic radiance the brilliancy of hundreds of concealed electric bulbs, centered in a ceiling of white and gold.

"Along the upper half of the room, on either side, is a gallery on which open the finest private suites on the

ship, and from which, through plate glass panels set in bronze frames and guarded by bronze rails, an impressive view of the room below may be had. A central decoration that quickly catches the eye is a large painting, opposite the entrance, representing two classic female figures, who have stepped from a boat to an island in an Alpine lake, and are about to partake of a repast spread upon the ground. A castle on heights in the background completes the suggestion of adventure."

Of course the "central decoration" is an epitome of what is commonly called "art in business." The wretched endeavor to plant two classic female figures on an island in an Alpine lake and to complete a suggestion of adventure with a castle on some heights above is a complete elucidation of the whole process that surrounds the making and the selling of far too many modern wares. Some kind friend ought to take the White Star Line in hand, not only in respect to its choice of decorators but likewise in the matter of its hired copy writers. But, alas, when the whole process of making a modern transatlantic liner is that of making it as unlike a ship as can be—of abolishing everything which might suggest that one was really on the ocean—of discarding all that was even remotely related to the entrancing lore and craft of the shipwright and the mariner, what difference does a bit of blurb decoration or a piece of blurb printing make? If the first cabin passengers on the *Homeric,* male and female, can be made happy by feasting their imaginations on the two dames on the isle and the two unseen gents beyond the moat, it might be worth a voyage—for adventure is a precious ingredient of life, not too easily come upon, and they say it should be taken when and where found.

It appears, in the light of what I have been saying, that Mr. Eidlitz's method of "de-bunking" is not alone applicable to building contracts. But the trouble is that the source of the bunk passes as easily by Mr. Eidlitz's eagle eye as by the rest of the de-bunkers. There is an almost overpowering bunk in all of man's present activities. It is a hopeful sign when he recognizes the fact. But it amounts to little unless he is willing to go on and explore. Bunk is not self-propagating. It is born of deceit. Of what then is deceit born? One does not care to enter too far into that field, but in so far as the building contract is concerned, let us get ready to recognize the underlying factors which have nothing whatever to do with the technique and craft of building and yet which now dominate and control it—the factors of Land, Credit, Interest, Profit, Rent, Inflated Unearned Increments, and the whole method of living, not by work but by owning. Poor human beings are not likely to be chided if out of this inhuman relationship they fall into the quagmires of bunk. Mr. Eidlitz's argument for the lost clause reminds me of the Frenchman who was found in the depths of some primitive wilderness. There he had set up his camp and there he lived the life of a philosopher. When his discoverers overcame their surprise and entered into conversation they ventured the remark that he had at least attained to complete liberty.

"Oh, yes," replied the philosopher, "but I am still searching for equality and fraternity."

The call that Mr. Eidlitz sounds in his Lost Clause, as it appears in this issue of the JOURNAL, is a clarion one indeed, but it falls upon ears whose owners are powerless to extricate themselves from the economic coils of our twentieth century state. That is the chief business to which man will address himself, some day, and then and not till then shall we witness very much de-bunking in any line. On the contrary, bunk is likely to flourish and prosper for some time yet.

The New York *Times,* in a recent paragraph devoted to a description of the new Savoy Hotel, permitted itself to say that disposition of certain public rooms would enable them to be used by the occupants of the hotel for social and private functions, and, said the *Times,* "only the highest type of function will be allowed." Also, in its critique of Reinhardt's "Miracle," it announced that the Century Theatre "had been lined with a cathedral." This is rather a precious pair of word contortions, but the most casual reader can discover equally precious ones in any newspaper in the land. The future of philology ought at least to be replete with humor. C. H. W.

From Our Book Shelf

An English University

The book[1] is simply descriptive text for the illustrations. The text, though very brief, contains a considerable amount of interesting details about Cambridge, and, quite apart from the drawings, is valuable.

The drawings are not good enough either as examples of draughtsmanship, or as subjects well-chosen for composition and interest, to warrant their being the excuse for the text. England has produced many draughtsmen who have done this successfully. The series of books on the counties illustrated in color show the English draughtsman at his best in water-color. In purely architectural drawing, or subjects where architecture is the chief interest, such men as Sidney Jones set a standard which few men here can touch. Yet even in these books the drawings are not the *raison d'être* of the books. In *Historic Cambridge* they are stated to be the object of the book, and as such are not really worthy of that distinction. They are such drawings as hundreds of young draughtsmen here turn out daily.

Let us turn then to the text. First, one is interested to learn (if he did not know it before) that there are twenty-six colleges at Cambridge; and of these Girton, Newnham and Homerton are for women and Chestnut, Ridley, Westcott and Westminster are theological.

The foundations are interesting as showing what a variety of people were involved in the beginnings of these colleges. Among the founders of the twenty-six colleges there is a long list of women, and these by no means modern, indicating that women long ago took an active interest in education. Christ's and St. John's were founded by Lady Margaret Beaufort in the early 16th century; Clare in the 14th by Lady Elizabeth de Clare, and Pembroke in the same century by the Countess of Pembroke. Two Queens founded Queens' in the 15th century. Sidney Sussex was founded by Lady Frances Sidney in the 16th century. Kings, Bishops, and com-

[1] *Historic Cambridge.* Pencil sketches by J. M. Delbos, with a foreword by L. F. Salzman.

moners founded others. Sir Walter Mildmay founded Emmanuel, John Harvard's college. The foundation of Selwyn reminds one of the Emerson group here, as it was for "sober living and high culture of the mind." Corpus Christi, a 14th century foundation, was due to the two town Guilds—a strictly democratic origin.

Of the twenty-six colleges those for women and the theological colleges have no part in the University as a governing body. The University is governed by the Senate, with a distinguished non-resident head, the Chancellor, and the practical head, the Vice-Chancellor. The colleges are self-governing and practically independent, but the University confers the degrees, and all the colleges are so closely connected with the University, its governing body and its policies, as to make it impossible to know of the colleges except as a part of the University.

As a brief record of Cambridge with its dates, facts, and college coats of arms, it is a useful book in any library.

R. Clipston Sturgis.

Current Activities[1]

Scientific Research Department
Producers' Research Council
Structural Service Committee

Scientific Research Department

The building industry of today has become so vast and complex that the architect, instead of being able—as in olden days—to know all building materials, has become dependent on some source for definite and reliable information. Therefore, it becomes almost imperative that the architect have a point of contact with the manufacturers. This contact must be broader than mere selling interest; their mutual aim must be better buildings and the manufacturer gains by being known as a manufacturer of worthy material.

The architect offering complete service is just as anxious to know of new developments as the manufacturers are anxious to have him know. This means the dissemination of information, whether it be called advertising or something else. In the past there has been much misdirected effort and much misleading information, and it has long been evident that a substantial saving to the building public could be effected. The architects also have felt that advertising literature could be standardized as to size to simplify filing.

The correlation of efforts of all the A.I.A. committees should be handled by one body. The correlation of information on products by all National Committees should be digested for the architects by some central body.

The steady increase in the work of the Structural Service Committee demanded a paid organization to handle the work in a businesslike way. So the Scientific Research Department was created. This department not only acts on behalf of the Structural Service Committee but is the point of contact between the Institute and the Producers' Research Council and its information is available to any committee or special committee of the Institute. The only orderly way to accomplish this purpose indicated centralized records and a definite source of scientific information available for the architectural profession and the construction industry.

N. Max Dunning, *Chairman.*

Producers' Research Council

The Producers' Research Council is an organization of manufacturers of building materials and appliances. It elects its own officers, fixes and collects its membership dues, is self-supporting and national in scope. The Board of Directors of the American Institute of Architects has recognized the Producers' Research Council as an affiliated body.

The fundamental purpose of the Council is to promote a more technical relationship between the architect and the manufacturer. Through a closer contact with the architect and a better understanding of the kind and character of information he needs to serve his client, it is believed that selling costs will be reduced and that the value of trade literature to the architect will be increased.

As manufacturers, the Producers' Research Council is interested in many of the lines of work in connection with which the Institute is endeavoring to improve present-day conditions. For example, in promoting fair and equitable jurisdictional awards, in improving the quality of design and construction of small houses, in improving industrial relations, in education of the architectural student who will later on specify building materials, and, since the American Institute of Architects is an organized body having no financial interest in price and placing quality above price, the manufacturers of quality products have an interest in raising the standards and increasing the sphere of influence of the architect.

Through the contacts which have been established, group opinions upon questions of mutual interest from the architectural profession are made available and will be of value to the producer. It is also hoped that, through combining in one organization manufacturers of standing who represent all phases of development in building trade progress, the Producers' Research Council will be able to make available to the various committees of the Institute group opinions and suggestions that may be of value.

O. C. Harn, *Chairman.*

Structural Service Committee

Federal Specifications Board

Tentative specifications for Glass and Glazing and proposed specifications for Hydrated and Quick Lime were submitted for criticism and suggestions. These specifications were transmitted to the Institute representative on the A.S.T.M. Committee on Lime and the Institute representative co-operating with the Bureau of Standards in the preparation of a standard specification for Glazing Glass. The reports of these representatives were transmitted to the Federal Specifications Board.

[1] In this department of the Journal it is proposed to keep the profession informed as to the activities of the Institute in regard to research work, standardization and co-operation with technical bodies.

American Society Testing Materials—Committee on Slate

At a meeting of the producers and consumers of slate it was decided to organize an A.S.T.M. committee. The Institute was represented at this meeting by a member of the Scientific Research Department. The A.S.T.M. has had up to the present time no committee on the physical properties and uses of any building stones. It was thought that at some future time a committee should be organized to prepare standards for some other stone that there would be no difficulty in co-ordinating the work of the two committees.

Regarding the scope of the committee work it was decided that first attention should be given to developing the methods of testing and in the normal course of events this would be followed by working specifications. It was agreed that dimensional standardization could more properly be handled through the Division of Simplified Practice.

American Society of Testing Materials. Meeting of Committee C-1 on Cement. Professor Thomas Nolan, Institute Representative

The following subjects are being considered by the ten sub-committees of Committee C-1:

The specific gravity of cement, whether or not this property should be considered in standard specifications for portland cement.

Tests for neat cement, whether or not requirements for these tests should be reinserted in the standard specifications for portland cement.

Natural cement, a consideration of tests of these cements and of revised specifications for their use. A sub-committee was appointed to consider this material.

A proposed book of instructions. The subject of a small hand book was discussed, to contain general information and instructions regarding proper methods to be followed in making tests on cement in order to avoid faulty conditions encountered in laboratories making these tests. It has been found that there have been different interpretations, sometimes, of the methods of tests as outlined in the Standard Specifications for Cement. It has seemed desirable to some to enumerate the precautions to be observed in order to secure the best results, and also to refer to errors which might be introduced by deviation from standard methods. "A Manual of Testing Procedure" was considered as a title for this book.

Among other subjects considered were the following: Proposed changes in foreign specifications, research work being done in the field of chemical constituents of portland cement and the effect of admixtures; compression specifications; sounds and consistency of volume; normal consistency; strength; fineness.

American Engineering Standards Committee. Conference on Galvanizing

Representatives of the producers, manufacturers and consumers of galvanized products met, under the auspices of the A.E.S.C., to discuss the standardization of galvanizing and sheradizing. The Institute was represented at this preliminary conference by the Scientific Research Department. It was decided that nationally uniform specifications for various classes of galvanizing and sheradizing work were feasible and should be taken up under the procedure of the A.E.S.C. A committee of five was appointed to confer and make recommendations in regard to the proper body to assume chairmanship of the proposed committee. The scope of the work of the committee embraces a wide range of uses of galvanizing and sheradizing. Two subjects—sheets and plates, and pipe, tubes and conduits—are of special interest to the architects.

Annual Meeting of the American Society of Heating and Ventilating Engineers

The Institute was invited to attend the annual meeting of the A.S.H.&V.E., held in New York City, 22 to 25 January. During some of the discussions of research work of the Society, references were made to the recently organized Scientific Research Department of the American Institute of Architects and the Technical Secretary of this Department was invited by the President to address the Society and outline our organization and aims and correct any impression that the engineers might have that the architects had established a testing laboratory.

The meeting was largely devoted to technical papers, many dealing with subjects of direct interest and value to the architects. Among the papers of special interest to the architects were the following: Ventilation of Department Stores, Electric Heating, Status of Domestic Oil Heating, Air Leakage Through Openings in Buildings, and the Report on Proposed Code of Heating and Ventilating.

Division of Simplified Practice, U. S. Department of Commerce

With a view to eliminating waste in the slate industry a preliminary conference of all interested was called on 23 January to discuss the recommended sizes of roofing slate, blackboard slate, and structural slate. The Institute was represented by a member of the Scientific Research Department. In connection with roofing slate it was recognized that a great variety of blocks are obtained in quarrying and that the effort should be to set up a list which would utilize with the least waste as many as possible of the blocks. Furthermore, a basic color nomenclature should be adopted and also a clean-cut definition of the thickness of slates and a standard for measuring such thicknesses. Agendas setting forth customary practice in regard to blackboard slate and structural slate were presented for consideration. The discussion of the various recommendations seemed to indicate the advisability of further study and research. The National Slate Association, therefore, decided to revise the recommendations along the lines indicated by the discussion and resubmit them for consideration at another conference to be called.

Marginalia Architectura

It was a beautiful spring morning in February, one of those rare days in the frozen north (reminiscent of Botticelli's "Primavera" or Pollajuolo's "Venus Verecunda") when "The touch of Zephyr and of Spring has loosen'd winter's thrall." We were surprised and delighted to meet our old friend, Bowser, honorary corresponding member of nobody knows how many architectural, archæological, antiquarian and allied societies (there is a string of letters after his name as long as the alphabet, which even includes an assortment of Chinese and Coptic characters, though he is perhaps best known for his researches and discoveries in the Pre-Incarial inscriptions at Caxamalca[1]).

"My dear fellow," he exclaimed, waving his long, graceful hands in a courtly gesture, "I have just come from a most charming *conférence* (for Bowser is as familiar with French phrases as any architect and rather proud of displaying his knowledge) at Providence, where the Rhode Island Chapter entertained their confreres from the other New England States within the hospitable portals of the Art Club. The occasion was pervaded with the aura of spiritual comfort and the genial warmth of companionship.

Unfortunately, however, I was unable to remain until the end of the interesting discussion which followed the dinner and the welcoming of the invited guests, a discussion that included such topics as "The Preservation of the Georgian Tradition" (ably and feelingly presented by Mr. Isham, who voiced the hope that, at least in New England, our suburban villages be not distorted and disfigured by the miasmic bottulinus of the bungalow, and that where inexpensive houses are built, the simpler forms of early Cape Cod outline, and back-country hill towns of the Connecticut Valley be followed), "Architectural Education," "The Duty of the Architect to co-operate with the School" (a procedure which might well be adopted, suggested by Mr. William Emerson, who objects to being called "Professor," and was thereafter addressed by the chair as "Bill"—his lucid suggestions were followed with keen interest), "The Obfuscations of the Competition Code" (remarks by Mr. Butler, who read a very able and clarifying letter from Mr. J. Lovell Little, which I hope will receive wide publicity, as it contains, in a few pungent paragraphs, the essence of high ideals and sound practice).

A thorough discussion on these topics should be of wide constructive value, not only to all architects but to those who may come in contact with them, both before and during the travail of building operations.

"The dinner at the Art Club that followed the welcoming process," continued Bowser—and here his resonant voice took on a more fruity tone—"recalls the *Carmina Burana* (attributed to Walter Map, though recent commentators are not so sure that Wright was right, and that the song was clearly written at Pavia between 1162 and 1165—vid. stanzas 9 and 24), where Golias declares

'With the cup the soul lights up,
Inspirations flicker;
Nectar lifts the soul on high,
With its heavenly ichor;'

"The clubhouse is picturesquely situated on the rise of one of the steep hills which engirdle Providence, the home of the bivalve, the *fons et origo* of the Rhode Island clambake; good old Colonial architecture and good old Colonial cooking—what could be sweeter? As you enter the Hall the stud is low, and all sorts of rooms and passages lead away in every direction and at different levels—some of it is Georgian, some of it is Eastlake, and some of it is President Hayes, but all is mellow and inviting, abounding in vistas of unexpected picturesqueness. The air is blue with smoke, vast steins and rows of *fiaschetti* suspended from the ceiling are seen dimly through the haze. Old prints, sketches and wall decorations are everywhere and the chairs and tables would delight the patina expert.

"In this mellow atmosphere we sat down to tomato soup, broiled English mutton chops with spaghetti, squash pie, doughnuts, cheese and coffee. A simple meal but one to be remembered. The soup was succulent and everything that tomato soup should be, rich in osmazôme. The chop, *parfaitment cuit au point,* full four fingers thick, was tender as a night in June, while the spaghetti which accompanied it was a combination of delicate flavors and savory essences which only the panurgy of a *gourmand* could evolve.

"The squash pie deserves a full paragraph. I did not see the completed structure, having only a portion brought to me on a plate, but it must have been a supreme work of genius like the Parthenon, the Temple at Edfou, of Salmanasar's palace at Khorsabad; in color a rich deep mahogany shot with baffling golden lights like great piles of amber and topaz. The crust—in the Late Perpendicular Style, was crisp and flaky—actually seemed to crumble from the mere menace of the fork. The noble squash had been manipulated by the genius of a master, and so imbued with savory, appetizing, palatable, delectable, luscious, ambrosial, and gustful aliments, as to produce what Brillat-Savarin[2] calls the three degrees of *le goût, la sensation directe, la sensation complète, et la sensation réfléchie.*

"There were great platters of doughnuts, smiling mounds of burnt cadmium, hot and fragrant. The cheese was soft and fresh, a perfect concomitant to the culinary *felicitas curiosa* of the New England housewife. It has not been definitely established that the doughnut was known to the Ionian Greeks, though the form of the rudimentary Ionic capitals would seem to indicate that such was the case. Certainly the doughnut is in outline the perfect torus and is fundamentally adaptive both to capital and base. The accidental placing of two of these forms on edge, like automobile tires, in combination with

[1] *The Ruined Monoliths of Tia-Huanacu,* by Beriah Bowser, M. A. Oxon, B.S.A., B.A.C., P.D., etc., etc. *In-folio,* 8 vols., ills., Lima, 1924. The Truxillo Pub. Co.

[2] *Physiologie du Gout, ou Meditations de Gastronomé Transcendante. Ouvrage théorique, historique et à l'ordre du jour, Par un Professeur, membre de plusieurs sociétés Savantes. Paris, Charpentier, Editeur,* 1838.

one whose axis lies in the vertical plane (a juxtaposition that might readily occur to the inventive mind of the Greek youth in the Golden Age of Thales and Anaximander) at once presents the *partie* of the Ionic column, the most toothsome and delectable of architectural supports.

"A really good cup of coffee crowned this most satisfactory repast, which after all owed its success to the solicitude of our hosts, the members of the Rhode Island Chapter. As *The Professeur* (q. v.) says in his preface to *Physiologie du Gout, 'Convier quelqu'un, c'est se charger de son bonheur pendant tout le temps qu'il est sous notre toit.'*"

* * *

In connection with revivals the following "NOTE ON SIR JOHN SUCKLING" is not without its due mead of appoggiatura.

In MS. Ashmole, 826 et seq. there is a brief reference to the friendship existing between Suckling and Inigo Jones. It is known that on his (Suckling's) return from the Palatinate in 1832, where he had served with credit under Hamilton in his campaign in Lusatia and Silesia, this "readie sparkling witt" became famous at the Court of Charles I. "Literature and the fine arts obtained an unprecedented encouragement from the King; and these, directed by his own acknowledged taste, and that of the beautiful Henrietta Maria, rendered the Court of England the most polished in Europe."

Rare Ben Jonson and Inigo Jones, who designed many of the decorations for his masques, were looked upon by Suckling with deep admiration and frequently the younger man showed a lively interest in Jones' work. It is not absolutely certain that Suckling ever worked as a draughtsman in Jones' office, though the recent discovery of a hitherto unpublished fragment addressed to Will (Davanant?) (*Facetiæ; Musarum Deliciæ*, &c., 1817, III. 499) would seem to show a fine feeling for their foibles. Whether or not Suckling's unlucky affair with the lovely daughter of Sir Henry Willoughby had any bearing on the viewpoint expressed is neither here nor there; we present the verse, so far as known, for the first time:

Ye Olde Tyme Draughtfmennef Drynkinge Songe:

Draftfmenne with love haue nothynge toe doe
Af alle toe sonne they'll difcouver,
For drynke if the onlye miftresse that's trewe
So drynke withe the lippef of a loover.

Drynke cocktaylef inne alle the fcales,
Drynke youre beere in fulle fyfes,
Drynke sherrye ande egge, downe bye the kegge
Ande drynke untyl the sonne ryfes.

Whyfkie ftraighte if a drynke for a manne, whyfkie ftraighte is a drynke for a planne,
But sherrye ande egge, dronke downe bye the kegge, if a drynke for a fronte elevatyone.

H. G. R.

Letters to the Editor

Advertising

TO THE EDITOR OF THE JOURNAL:

Yesterday there came in the mail from one of our member companies a copy of the solicitation the Architectural Club of New Haven is making to manufacturers of building products, appliances, accessories, etc., for the sale of space in a catalog to be published in connection with its Fifth Annual Architectural Exhibition.

Accompanying the copy of the Architectural Club's communication was a letter from our member inquiring whether the Canon of Ethics of the American Institute of Architects in reference to solicitation for advertising in programs, catalogs, monographs, etc., applied to such a body as the Architectural Club.

To our member we replied that, although the Architectural Club of New Haven was not affiliated with the Institute, there are members of the Club who are also members of the Institute, and that we proposed writing some of these gentlemen suggesting they use their influence to have the Architectural Club refrain from conduct which the Institute has condemned as unethical when practiced by the individual architect.

It is, of course, not uncommonly the case that when we condemn in the individual we condone in the mass; and that men are very often helpless to prevent in the mass that which they abhor if practiced by the individual.

And yet, the Architectural Club cannot be so much of a mass that those members of the Institute who belong to it cannot take steps to have the Club conform to a code of ethics they themselves, individually, approve and follow.

ASSOCIATION OF NATIONAL ADVERTISERS, INC.,
J. SULLIVAN, *Secretary-Treasurer.*

A System of Architectural Ornament

The publication hitherto announced as a Portfolio of Drawings by Louis H. Sullivan will issue from the press about 10 March and will be entitled A System of Architectural Ornament. The price of the published edition will be Fifteen Dollars. The typography of the book is by Mr. Frederic W. Goudy, Institute Gold Medallist in Allied Arts, and the work will take high rank among American publications, both as an achievement in the literature of architecture as well as in the field of printing. There will be ten special numbered and hand-tooled copies bound in full leather at One Hundred Dollars each, and fifty copies in half leather at Fifty Dollars each. Both of these specially bound editions will be autographed by the author. A circular will be mailed on request.

Obituary

Henry Bacon

Elected to the Institute in 1902; to Fellowship in 1906
Died at New York City 16 February, 1924

Less than a year ago Henry Bacon stood in the center of the assembled pageant on the steps of the building he had himself designed as a memorial to the life and the works and the abiding spirit of Abraham Lincoln.

It was one of the most beautiful events in the history of American architecture, and when from President Harding Henry Bacon received the highest honor which it is within the power of the American Institute of Architects to confer, his brothers in the practice of architecture thrilled deeply at the tribute; it is fair to say they were even more deeply thrilled than when Mr. Cortissoz, in his memorable address, spoke of Bacon as one who had "stated in enduring beauty the faith of a nation in an immortal leader." More beautiful because the beauty of it was then and there felt, for "heard songs are sweet, but those unheard are sweeter."

It seemed just that Henry Bacon should have lived long to wear his honors and to bask modestly, as was his wont, in the warmth of a great growing national appreciation of his work, but it was not to be. He entered the Post Graduate Hospital in New York on 10 February in the hope that he would come forth renewed in health, and so for some days it seemed. But on the morning of the 16th he passed away.

In the JOURNAL for June of last year, there appears an account of Henry Bacon's life and work. But as an evidence of the place which he had won in the public esteem, we reprint the editorial from the New York *Tribune* of 18 February:

When a great artist dies he takes from us the embodiment of an idea. He is the representative of a principle, a style, an individualized vision of beauty. Such a type was Henry Bacon. As a man he was modesty itself, gentle, generous, all sunny kindness to his friends. As an artist he stood for the severity of the Greeks and figured in his profession as the most consummate exemplar of the grand style we have ever had. This fact, which is confirmed by a large number of buildings designed by him, is made most triumphantly manifest in the Lincoln Memorial at Washington. Bacon's genius reached its culminating point in that famous temple. There he exposed in its noblest estate his idea, his style, his vision of beauty.

It is a fine thing when we can thus conceive of an artist's character, for it means recognition of something constructive, something durably fertilizing that he has brought into the world. Beauty is a living force. It does more than please the eye. It stimulates the brain, it warms the heart and brings the better self of mankind into action. The tribute that we pay to certain of the architects of America is a tribute of gratitude to men who left American art better than they found it. Richard M. Hunt did that when he brought here from Paris the motives of French classical design and used them with distinction in his own work. Henry H. Richardson was another significant contributor to our artistic experience through his exploitation of Romanesque. Charles F. McKim was in his turn a profoundly fruitful disseminator of the ideas of the Italian Renaissance and of the Roman principles underlying them. Henry Bacon, who, as a creative artist, was the peer of them all, dedicated himself to the majestic inspiration of the antique. With unique power he truly revived "the large utterance of the early gods."

He used it with much more than the authoritative skill of a craftsman mastering a technical instrument. It was for him the means whereby he instinctively expressed an inner spiritual purpose. Greek simplicity, Greek order, Greek beauty and grandeur were to him as the air he breathed. He dealt in these things with a fervor and a rectitude giving to his art a kind of moral weight. Art was with him, in fact, character in action. There was something enkindling about his devotion to the Lincoln Memorial. To those who knew him and observed him during the year of its erection nothing was more beautifully apparent than his absorption in what might be called the idealistic elements of his task. It was his privilege to commemorate Abraham Lincoln, and it was that, not merely the fulfillment of an architectural obligation, that engaged his very soul. Bacon was every inch a man, ardent upon political honesty, steadfast and invincibly square in all the relations of life, impeccable in the performance of duty, clean and sweet and strong, a friend whose death brings inexpressible sorrow to those who loved him. All these rich traits were poured as in a golden flood into the work that he did as an architect. The only comfort that we have in bidding him farewell is that he leaves behind him a shining and a deathless mark.

On 18 February the NEW YORK CHAPTER adopted the following resolution, prepared by Mr. C. Grant La Farge:

As we realize that the friendly voice of Henry Bacon is forever stilled, there come to us reflections of profound significance.

We recall first how that voice was never raised except in the ways of kindness, never expressed any other humor than that which has no sting. We think of the deep essential sweetness that radiated from the good man. And as affection moves us it is mingled with reverence at the thought of his pervasive modesty, the absence in him of any exploitation of himself, of his utter singleness of purpose and his sincerity.

True, devoted student of that great art of Greece that he so deeply loved, he came to know it as only the lover can know. Unfaltering in his fidelity, his long striving was not for what so many seek: bigness and loud acclaim and the driving bustle of the market place, but ever to capture and make to live again the exquisiteness of the most perfect moment of man's past. Let us all now be glad that the fine crown of his career was bestowed upon him by his own brethren, as they charged him with the task of serving his country by commemorating its great hero.

We may hold what views we like about the forms of our art; we can have but one as to the nobility of him who is gone away from us and of whom we shall with pride tell our sons. Grief is with us, and sympathy for the afflicted, but above the grief is thankfulness for what he was.

D. EVERETT WAID, *President.*
HOBART B. UPJOHN, *Secretary.*

Structural Service Department appears on the second right-hand page following

Structural Service Department

LEROY E. KERN, *Technical Secretary*

In connection with the work of the Committee on Structural Service of the American Institute of Architects and in collaboration with other professional societies and organized bodies having the same objective—improvement in building materials and methods and better shelter for humanity in all its manifold vocations and avocations

Abstracts

It is the purpose of the Structural Service Committee and THE JOURNAL *jointly to give in this division, each month, brief abstracts of all publications by the Government Departments and Bureaus, University and other research laboratories, States and Associations, which contain fresh information in regard to materials or methods employed in construction and thus accord architects and others a convenient means of keeping themselves conversant with rapidly expanding knowledge in the technique of construction.*

Air Leakage Through the Openings in Buildings—Weatherstrips (19e14)—(*Journal of the American Society of Heating and Ventilating Engineers—February—1924. By F. G. Houghten and C. C. Schrader*). Heat is lost from buildings *First,* by transmission and *Second* by infiltration, both of vital concern to the heating and ventilating engineer, architect and owner. Both are difficult of exact measurement and determination of constants which may be used in practice with the desired engineering accuracy. The calculation of heat loss from buildings probably involves greater element of chance than any other engineering problem.

The present investigation of the leakage of air through and around all types of windows and doors was made by the Research Laboratory of the American Society of Heating and Ventilating Engineers, in co-operation with the American Institute of Architects and the U. S. Bureau of Mines. The architect is interested in the relative leakage of air through various types of windows and doors, with and without weatherstripping, to design a building with the lowest heat loss consistent with other considerations. The heating engineer needs actual leakage through and around all types and sizes of windows and doors, or better, through a unit length of crack around such openings, to calculate more accurately heat loss from any room or building and supply radiation accordingly.

Air leakage through cracks around windows and doors, cracks in walls, and through the wall materials, occurs in accordance with two physical laws. *First,* interchange of air through wall by diffusion; *Second,* air current through wall caused by pressure difference set up by the impinging wind. The first goes on at all times, is independent of wind velocity, and is probably negligible. The second occurs only when there is pressure difference between the two sides of wall. Such pressure difference exists whenever the wind blows against surface of wall or whenever the direction of wind toward wall is changed. For any given velocity of wind striking wall at right angles, there is always definite pressure produced at surface tending to cause air leakage through cracks. Amount of air leakage for any crack for a given pressure difference is the same, whether pressure is produced by wind or other cause.

Data and Results. Results here given are for a double hung window, 2 ft. 8 in. x 5 ft. 2 in. x 1⅜ in. in 13 in. brick wall 10′-0″ high by 6′-6″ wide, plastered inside with cement plaster, built according to specifications supplied by and under the direction of S. F. Heckert, representing Structural Service Committee, American Institute of Architects. Every precaution was taken to make it represent

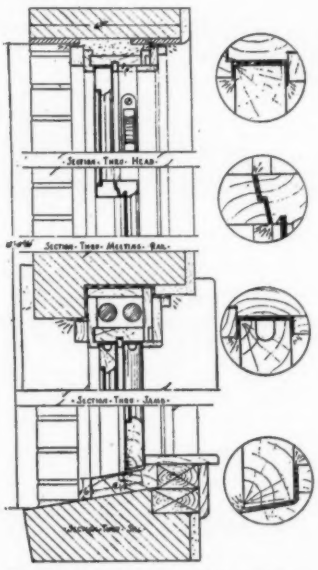


FIG. 3. DETAILS OF WINDOW WITHOUT WEATHERSTRIPPING

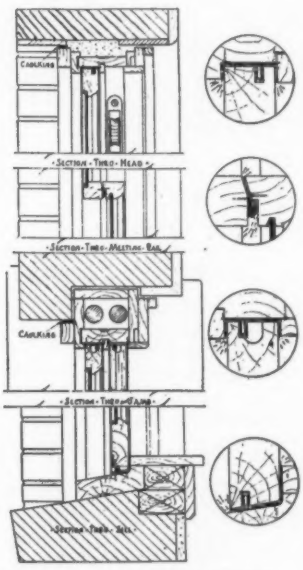


FIG. 4. DETAILS OF WINDOW WITH RIB TYPE WEATHERSTRIPPING

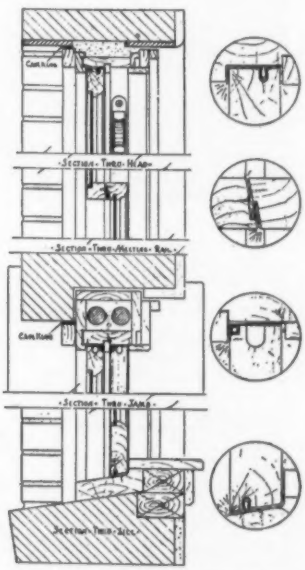
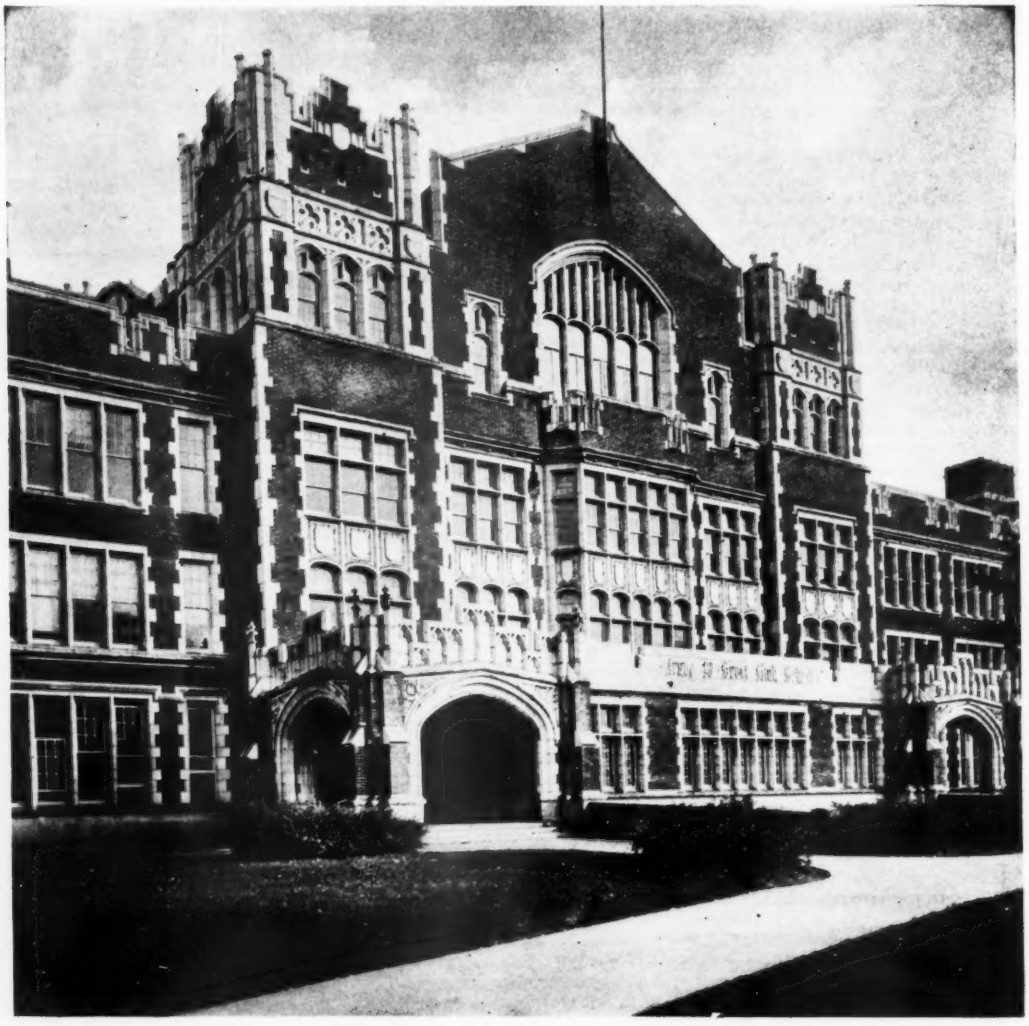


FIG. 5. DETAILS OF WINDOW WITH INTERLOCKING TYPE WEATHERSTRIPPING



Detail of Central Feature, Jesup W. Scott High School, Toledo, Ohio; David L. Hine, Architect. The Morrison R. Waite High School, Toledo, is of identical design.

Both schools are of colossal size and are trimmed with "NORTHWESTERN" Light Gray Standard terra cotta in connection with red rough-faced Bokhara brick, giving an unusually effective color combination.

NORTHWESTERN is a short form of specification for architectural Terra Cotta of superior quality.

THE NORTHWESTERN TERRA COTTA COMPANY

CHICAGO

work done by the ordinary contractor under the supervision of an architect. Sash and frame were given three coats of paint.

The results are: *First,* those obtained in preliminary tests on an unweatherstripped window in wall as built, and with certain changes such as calking frame, sealing cracks, and painting wall; *Second,* results obtained from tests with various sash hung under different conditions with and without weatherstripping.

Preliminary Tests were made to differentiate between various channels of leakage through window and wall. Leakage through the window consists of: *First,* that passing through the cracks, around the sash perimeter, subject to weatherstrip application; *Second,* that passing through cracks between frame and brick and also eliminated by calking under staff bead or brick mold, or frame leakage; *Third,* leakage through other cracks in frame or sash not eliminated by weatherstripping or calking, or "elsewhere" leakage.

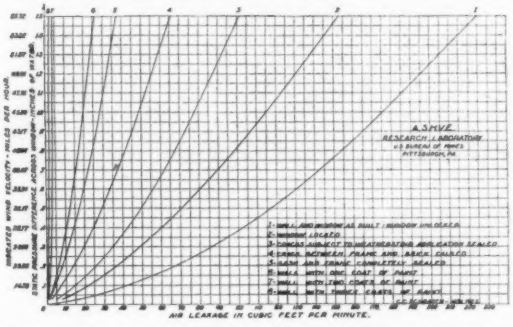

INDICATED WIND VELOCITY - MILES PER HOUR
STATIC PRESSURE DIFFERENCE ACROSS WINDOW - INCHES OF WATER
AIR LEAKAGE IN CUBIC FEET PER MINUTE.
A.S.H.V.E.
RESEARCH LABORATORY
U.S. BUREAU OF MINES
PITTSBURGH, PA.

FIG. 6.—LEAKAGE THROUGH VARIOUS PARTS OF WINDOW AND WALL

Curve 1. Window as built in, showed with a wind pressure of 14.4 miles per hour. 42 cu. ft. of air per min. leakage through window and wall; with wind pressure of 45.5 m.p.h., the leakage was 174 cu. ft.

Curve 2. Window locked, reducing leakage 20 cu. ft. p.m. with 14.4 m.p.h. wind velocity, and 64 cu. ft. p.m. with 45.5 m.p.h. wind velocity.

Curve 3. All weatherstrippable cracks sealed with rubberized adhesive tape. Proportionate leakage reduction shown on chart.

Curve 4. Staff head, or brick mold removed and crack between frame and brick wall calked. Brick mold replaced. Calking applied between frame sill and brick. Leakage reduction indicated on chart. (Difference between 3 and 4 indicates leakage between frame and wall.)

Curve 5. Sash and frame completely sealed. (Difference between 4 and 5 indicates "elsewhere" leakage.)

Curve 6. One coat of paint applied to wall.

Curve 7. Two coats of paint.

Curve 8. Three coats of paint.

Total leakage through entire wall reduced from 4.5 cu. ft. p.m. to 0.2 cu. ft. p.m., at 14.4 m.p.h. wind velocity; and from 28 cu. ft. p.m. to 0.9 cu. ft. p.m., at 45.5 m.p.h. wind velocity. Net area of wall approx. 51 sq. ft. Special tests to show leakage from chamber B indicated this as negligible.

When the galvanized plate and tape were removed tests were made to check decrease in leakage resulting from their application. Calking around frame and paint on the wall were not removed, so that the curves in all figures after Fig. 6 do not include frame and wall leakage, and show only leakage through window.

Tests on Windows With and Without Weatherstripping. Tests were made with a number of sash with and without weatherstripping and with various widths of crack around the sash perimeter. Preliminary tests were made with sash too light for practical purposes. Tests were made with cracks of 1/16, 1/8, 3/16 and 1/4 in. on both sides, top and bottom of sash, without weatherstripping and with two types of weatherstripping. Size of crack was increased to approximate the condition of loose windows in old buildings.

Sash were often changed and at least two different sash were fitted and tested for each condition. Figs. 4 and 5 show vertical sections with two types of weatherstripping with horizontal sections through one side of sash and frame, and detailed sections of the various weatherstripped cracks.

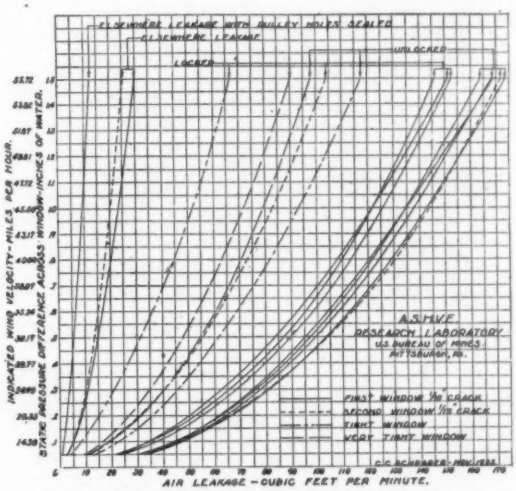
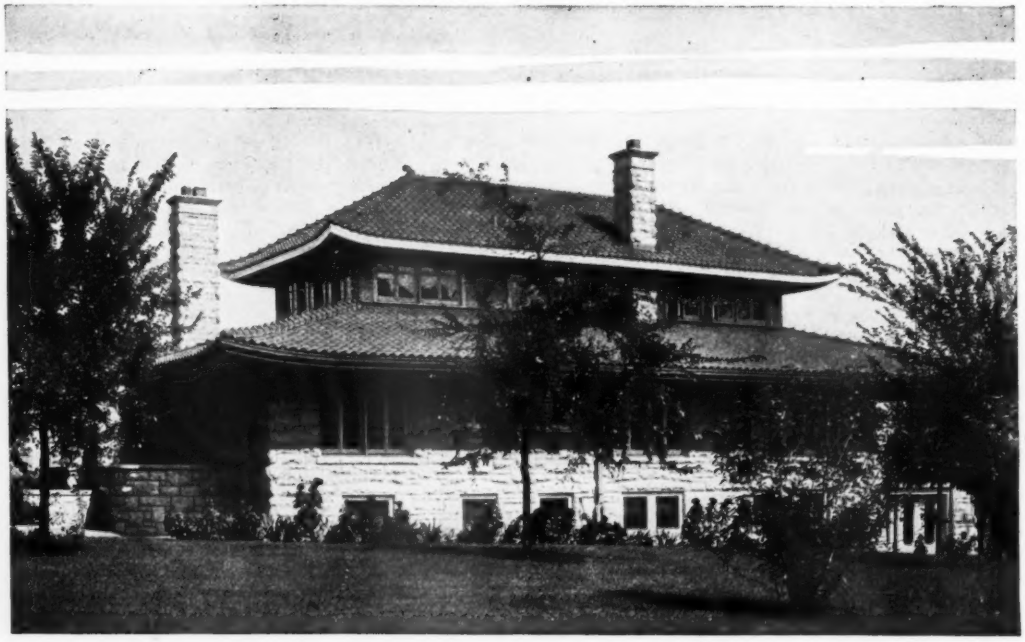


FIG. 7.—TESTS ON WINDOW WITH VARIOUS CRACKS

Curves in Fig. 7 show variation in data for different windows fitted in the same way, for same sash removed and replaced several times; also leakage for tight windows and effect of sealing the pulley holes. The 5 curves for the unlocked window with 1/16 in. crack show the variation which obtained for the same window under different conditions and for a second window fitted as nearly the same as could be done by a carpenter. The greatest variation from the mean of the five series of tests is about 4%. Variation in leakage of same window locked shows the effect of locking, the main effect of which is on leakage through meeting rail crack. The lock on the sash giving the three solid line curves was put on by the carpenter in the usual manner. The lock on the sash giving the curve with the short dashes was put on by a member of the laboratory staff so as to draw meeting rails together as tightly as possible. Locks on the weatherstripped windows were put on by the carpenter. Locking caused no reduction in leakage for these windows.

The tight window was fitted to allow easy opening. The very tight window required considerable effort in opening.

In the tests for "elsewhere" leakage cracks around upper sash were sealed on the inside; weatherstripping was on inward side of pulley holes and thus would not reduce leakage through these holes. Cracks around lower sash were sealed on the outside because weatherstripping was applied



Residence of Dr. D. E. Clopper, Argentine, Kansas. J. G. Brecklein, Architect

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A roof of Ludowici-Celadon Tiles can be constructed to harmonize, both in design and shade, with any type of building. This adaptability is a highly desirable feature which is being recognized more and more by leading architects the country over.

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near this side of sash. A series of tests was made to determine percentage of elsewhere leakage through outer pulley holes into weight box and out through inner holes or through cracks in frame. Fig. 7 shows that more than half of the elsewhere leakage occurred through these holes.

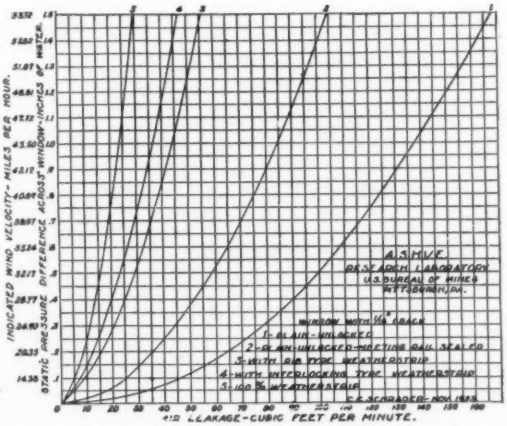

INDICATED WIND VELOCITY - MILES PER HOUR
STATIC PRESSURE DIFFERENCE ACROSS WINDOW - INCHES OF WATER
A.S.H.V.E.
RESEARCH LABORATORY
U.S. BUREAU OF MINES
PITTSBURGH, PA.
WINDOW WITH 1/16 CRACK
1- PLAIN - UNLOCKED
2- PLAIN UNLOCKED - MEETING RAIL SEAL CO
3- WITH AIR TYPE WEATHERSTRIP
4- WITH INTERLOCKING TYPE WEATHERSTRIP
5- 100 % WEATHERSTRIP
C.E. SCHARMER - NOV 1929
AIR LEAKAGE - CUBIC FEET PER MINUTE.

FIG. 8.—RESULTS OF TESTS ON WINDOW WITH 1/16" CRACK AROUND PERIMETER

Curve for unlocked window with ¼ in. crack as obtained from test data shows less leakage than same condition with smaller cracks. While this is contrary to what might be expected it can be explained and corrected as follows:

In testing windows without weatherstripping, lower sash was pushed against sill and upper sash raised until meeting rails were even. Because of construction of meeting rails, raising upper sash beyond this point would reduce crack between them. With ¼ in. crack and meeting rails even, it was found that upper sash would just come to edge of outside top on head of frame. This stop extended ½ in. from frame. Also, if sash were not planed off parallel to head stop, there would be a visible crack. To get a test, conditions of which would compare with preceding tests, upper sash was raised above edge of head stop; crack between meeting rails decreased and resultant leakage was less than with smaller cracks. To correct for this decrease, tests were made with crack between meeting rails sealed (Fig. 11). Curve 2 shows leakage with crack between meeting rails not sealed and Curve 3 leakage with crack sealed. Windows with 1/16 in., 1/8 in., and 3/16 in. cracks were tested with this crack sealed to determine leakage between meeting rails with members even. This leakage, subtracted from that found with crack unsealed, represents leakage through it. This proved to be much greater than that found in tests on window with ¼ in. crack with meeting rails uneven. Also it was found to be practically the same for all three windows. An average was taken and leakage for window with ¼ in. crack corrected accordingly. Curve 1, Fig. 11, shows corrected values. The difference between Curves 1 and 2, Fig. 8, shows leakage between meeting rails for window with 1/16 in. crack. Leakage for all windows with this crack sealed was practically the same.

Examination of the curves for a plain window with different size cracks shows only a small variation for the 3 smaller ones. Various factors must be considered to account for this. The sash is 1⅜ in. thick, sliding in a 1-7/16 in. groove. If sash were held in the middle of this space between stops there would be a 1/32 in. crack on either side. In this position the smallest crack around edge of sash through which air must pass is a maximum. The moment the wind strikes the window it tends to move it against the inside stops, thus increasing outside crack but decreasing inside crack. Since leakage depends largely upon the minimum width of crack around sash perimeter, it is limited by tightness with which sash is forced against stops. Increasing width of crack around edge of window does not decrease minimum width of crack, hence leakage is not reduced measurably.

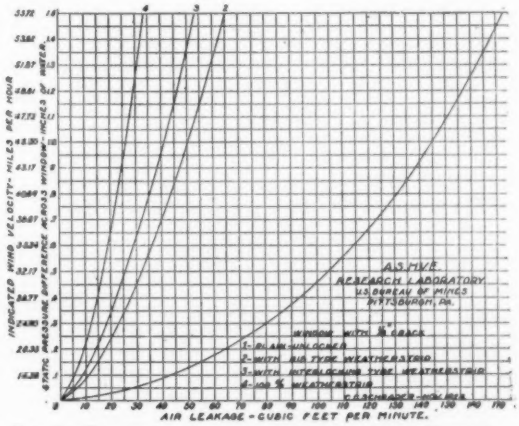

INDICATED WIND VELOCITY - MILES PER HOUR
STATIC PRESSURE DIFFERENCE ACROSS WINDOW - INCHES OF WATER
A.S.H.V.E.
RESEARCH LABORATORY
U.S. BUREAU OF MINES
PITTSBURGH, PA.
WINDOW WITH 1/8" CRACK
1- PLAIN UNLOCKED
2- WITH AIR TYPE WEATHERSTRIP
3- WITH INTERLOCKING TYPE WEATHERSTRIP
4- 100 % WEATHERSTRIP
C.E. SCHARMER - NOV 1929
AIR LEAKAGE - CUBIC FEET PER MINUTE.

FIG. 9.—RESULTS OF TESTS ON WINDOW WITH ⅛" CRACK AROUND PERIMETER

Tables 1 and 2 give data from curves Figs. 6 to 11 or resulting therefrom. Table 1 gives leakage in cubic ft. per min. for whole window and per linear ft. to crack, for wind velocities of 14.4 and 24.9 miles per hr. It is of interest to note that for a plain window with crack varying from 1/16 to ¼ in. leakage is 46 cu. ft. per min., while for the two types of weatherstripping tested it varies from 9 to 18 and 7 to 10 cu. ft. per min., respectively. Heat loss for any temperature difference varies directly as the leakage. Radiation required to supply this heat loss is given for higher temperature difference only, since it must be supplied for the maximum condition. With a 14.4 mile wind based upon the above temperature difference, unweatherstripped windows with cracks varying from 1/16 to ¼ in. required 14.6 sq. ft. of radiation, while with the two types of weatherstripping they require only from 2.8 to 5.7 and 2.2 and 3.2 sq. ft., respectively. Basing cost of radiation on $2.00 per sq. ft. installed, the two types of weatherstripping will show resulting decrease in first cost of radiation of about $18.00 and $23.00 per window, respectively. Further saving in coal per year based upon a 7-month heating season with average temperature difference of 35 deg. is also given.

Table 2 gives the "elsewhere," wall, and frame leakage, and leakage through window with and without weatherstripping for various wind velocities.

The most surprising fact brought out is leakage per sq. ft. of wall. With a 15 mile wind each sq. ft. of 13 in. wall, plastered inside, allowed the passage of 0.111 cu. ft. of air per min., while leakage through window and frame for same wind was 47.5, 9.7, and 7.8 cu. ft. per min. for plain window and two types of weatherstripping, respectively. Window and frame area is 16.25 sq. ft. giving leakage of 2.82, 0.597 and 0.48 cu. ft. per min. per sq. ft. of window without and with two types of weatherstripping. On these figures, leakage through window and frame varies from 4 to 28 times

The Architect's Own Specification For Tilework

The work of the architect or his specification writer, as far as it pertains to tilework can be simplified to a single paragraph such as the following (or one of similar purport) which is quoted from the work sheets furnished as scratch pads for architects offices.

TILEWORK

Furnish all materials and labor necessary for the completion of the tile~ work according to the accompanying drawings and the following specification and schedules. The Basic Specification for Tilework, First Edition, 1921, as issued by the Associated Tile Manufacturers, Beaver Falls, Pa. in so far as any portion is applicable to this building, is hereby declared to be ~ and is made a part of the contract to have the same force and effect as tho written in full in this specification (except as it may be modified herein.)

The Basic Specification does not mention by name the product of any manufacturer of tile, but is a general document applicable to any kind of tile installation over any type of construction.

The Basic Specification for Tilework is not a document intended to be copied. It is distinctly a reference ~ document. It was prepared by our consulting architect in cooperation with other architects throughtout the country and others qualified to contribute and en~ hance its value.

A copy of the Basic Specification should be in all reference files. Work Sheets, schedules, specifi~ cation reminder and checking list will be supplied upon request.

ASSOCIATED TILE MANUFACTURERS
~Beaver Falls ~ Penna~

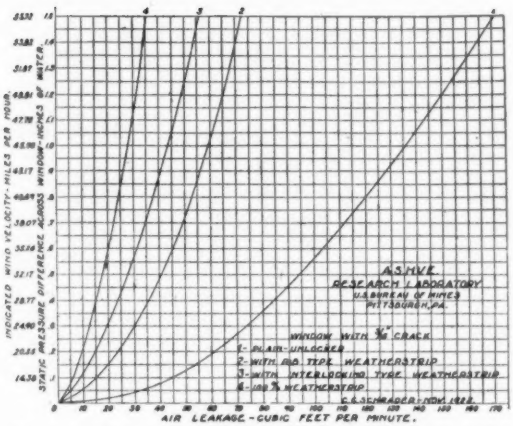

INDICATED WIND VELOCITY - MILES PER HOUR.
STATIC PRESSURE DIFFERENCE ACROSS WINDOW - INCHES OF WATER
A.S.H.V.E.
RESEARCH LABORATORY
U.S. BUREAU OF MINES
PITTSBURGH, PA.
WINDOW WITH 3/16" CRACK
1 - PLAIN - UNLOCKED
2 - WITH RIB TYPE WEATHERSTRIP
3 - WITH INTERLOCKING TYPE WEATHERSTRIP
4 - 100 % WEATHERSTRIP
C.E. SCHMIDT - NOV. 1926
AIR LEAKAGE - CUBIC FEET PER MINUTE.

FIG. 10.—RESULTS OF TESTS ON WINDOW WITH 3/16" CRACK AROUND PERIMETER

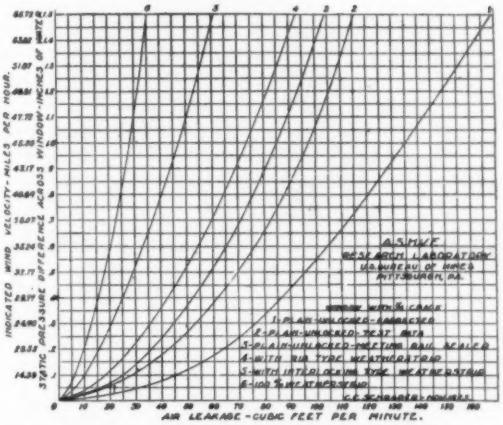

INDICATED WIND VELOCITY - MILES PER HOUR.
STATIC PRESSURE DIFFERENCE ACROSS WINDOW - INCHES OF WATER
A.S.H.V.E.
RESEARCH LABORATORY
U.S. BUREAU OF MINES
PITTSBURGH, PA.
WINDOW WITH 1/4" CRACK
1 - PLAIN - UNLOCKED - ARMLOCKED
2 - PLAIN - UNLOCKED - HEAT DATA
3 - PLAIN - UNLOCKED - METHOD AND SCALES
4 - WITH RIB TYPE WEATHERSTRIP
5 - WITH INTERLOCKING TYPE WEATHERSTRIP
6 - 100 % WEATHERSTRIP
C.E. SCHMIDT - NOV. 1926
AIR LEAKAGE - CUBIC FEET PER MINUTE.

FIG. 11.—RESULTS OF TESTS ON WINDOW WITH 1/4" CRACK AROUND PERIMETER

that through same wall area. Considering the usual greater area of wall to window, it is evident that leakage into a room is usually greater through wall than through window if weatherstripped, and not many times less if not weatherstripped. It is of interest to compare heat loss through windows and walls by transmission and by leakage. Leakage for plain window and with two types of weatherstripping all for 1/16 in crack and a 15 mile wind is 47.5, 9.7, and 7.8 cu. ft. per min., respectively, representing a heat loss of 2580, 527 and 423 B.t.u. per hr., respectively, for 50 deg. temperature difference. Leakage of 0.111 cu. ft. per min. per sq. ft. of wall represents heat loss of 6.03 B.t.u. per hr. for 50 deg. temperature difference. Taking transmission through wall as 0.28 B.t.u. per hr. per sq. ft. per degree temperature difference, this loss is 14 B.t.u. per hr. for the same temperature difference. Heat loss as thus indicated by infiltration is 43 per cent as great as heat loss by transmission as indicated by the constant used.

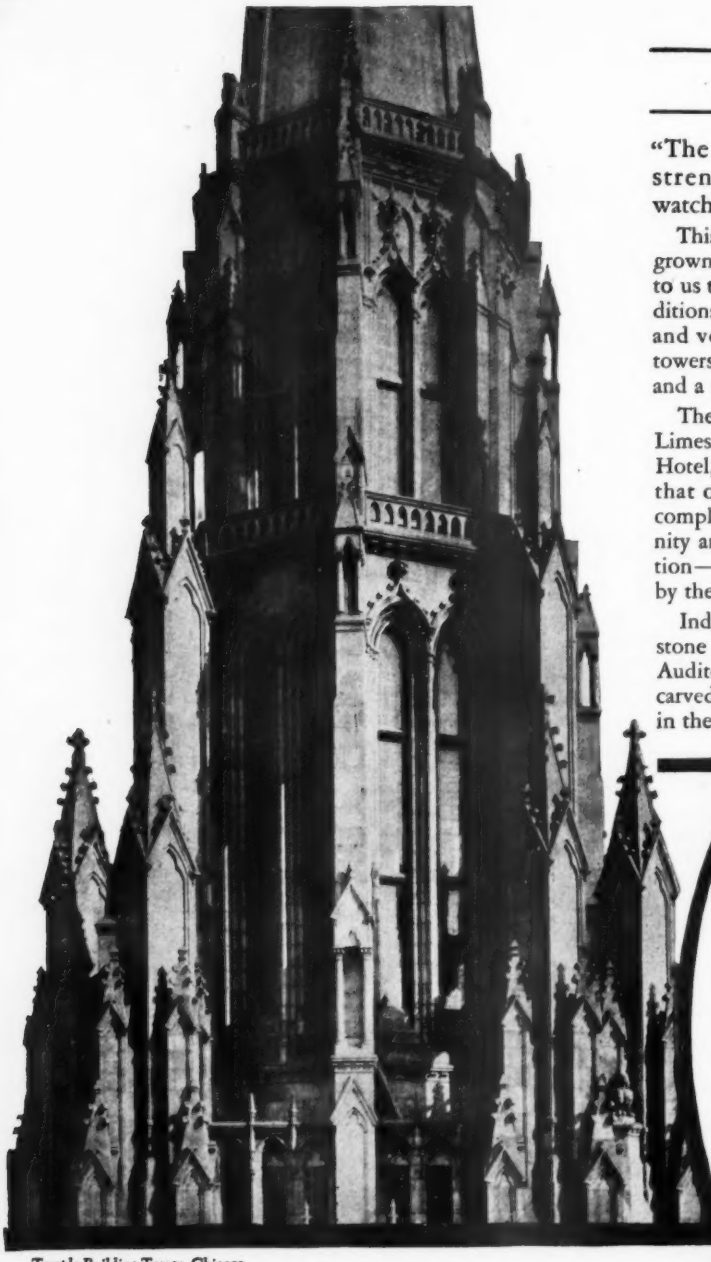
Values in the test table are probably somewhat higher than found in practice. They represent leakage when pressure drop through window is a certain value which represents a definite wind velocity at right angles to window. If the wind strikes window at an oblique angle the component of the velocity at right angles to window must be considered. Pressure difference between outside and inside surfaces of window for an actual wind will be slightly less for a given velocity because of a building up of pressure within room before air leaks out opposite side of building. Attention is called to the fact that air leaks in on windward side and out on leeward, and, since wind will blow from various directions at different times, heating for a room with only one exposure must be based on maximum loss. The heating plant, however, need not be figured on the sum of all maximum leakages but in general only half of total. However, the tables give accurate comparative figures, probably not much too high for actual practice.

TABLE 1. DATA ON TESTS OF WINDOWS UNDER VARIOUS CONDITIONS

		Leakage C.F.M. Crack Perimeter 18′ 4″				B.t.u. per Hour								Radiation on Sq. Ft. 240 B.t.u. per Sq. Ft. per Hour				Lb. of Coal Based on 13,000 B.t.u. and 50% Efficiency at Radiator 35°–70°Fahr. for Seven Months			
						0–70°Fahr.				20–70°Fahr.				0–70°Fahr.							
		For total window		Per ft. crack		For total window		Per ft. crack		For total window		Per ft. crack		For total window		Per ft. crack		For total window		Per ft. crack	
Wind velocity, M.P.H.		14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9	14.4	24.9
Plain window—very tight–unlocked		19.0	40.0	1.04	2.18	1445	3040	78.7	166.0	1033	2170	56.3	118.5	6.02	12.67	0.328	0.692	560	1180	30.50	64.3
Plain window—tight – unl'kd.		22.0	46.0	1.20	2.53	1673	3500	91.3	192.5	1195	2500	65.2	137.5	6.97	14.60	0.381	0.802	648	1357	35.40	74.5
Plain window—1/16″ to 1/4″ crack—unlocked		46.0	75.0	2.53	4.08	3500	5700	192.5	310.0	2500	4075	137.5	222.0	14.6	23.80	0.802	1.290	1357	2213	7.45	120.5
Rib Strip	1/16″ Crack	9.0	20.0	0.49	1.09	685	1522	37.3	83.0	488	1087	26.6	59.2	2.86	6.34	0.155	0.346	266	590	14.45	32.2
	1/8″ Crack	11.0	22.5	0.60	1.25	837	1710	45.6	95.1	598	1223	32.6	67.9	3.48	7.12	0.190	0.396	324	663	17.70	36.9
	1/4″ Crack	15.0	30.0	0.82	1.63	1141	2282	62.2	124.4	815	1630	44.4	88.8	4.75	9.50	0.259	0.518	442	884	24.10	48.5
	1/2″ Crack	18.0	36.0	0.98	1.96	1370	2740	74.7	149.4	978	1956	53.3	106.6	5.71	11.42	0.311	0.622	531	1062	28.95	57.9
Interlocking Strip	1/16″ Crack	7.0	16.0	0.38	0.87	533	1218	29.0	66.3	380	870	20.7	47.3	2.22	5.07	0.121	0.276	207	472	11.23	25.7
	1/8″ Crack	8.5	18.0	0.46	0.98	647	1370	35.3	74.7	462	978	25.2	53.3	2.69	5.71	0.147	0.311	251	531	13.66	29.0
	1/4″ Crack	9.0	19.5	0.49	1.06	685	1483	37.3	80.9	489	1060	26.6	57.8	2.85	6.18	0.155	0.337	266	575	14.45	31.4
	1/2″ Crack	10.0	20.5	0.55	1.12	761	1560	41.4	85.0	543	1114	29.6	60.7	3.17	6.50	0.173	0.354	295	605	16.08	32.9

TABLE 2. LEAKAGE IN C.F.M.

Wind Velocity M.P.H.	Frame 17′ Perimeter		Wall per Sq. Ft.	Elsewhere	Window with 1/16″ Crack				Perimeter 18′ 4″			
					Plain		Rib strip		Interlocking Strip			
	For total window	Per ft. crack			For total window	Per ft. crack	For total window	Per ft. crack	For total window	Per ft. crack		
5	0.50	0.0294	0.0111	0.7	15.0	0.818	1.3	0.071	1.0	0.0546		
7.5	2.3	0.1325	0.0289	1.8	24.0	1.31	3.0	0.164	2.2	0.1200		
10	4.0	0.2350	0.0512	2.8	32.5	1.77	5.0	0.273	4.0	0.2180		
15	8.0	0.4710	0.1110	5.2	47.5	2.59	9.7	0.529	7.8	0.4260		
20	11.0	0.6470	0.1780	7.6	61.5	3.36	14.8	0.808	11.8	0.6440		
30	19.0	1.1180	0.3330	13.6	89.0	4.86	25.5	1.390	20.0	1.0920		
40	25.5	1.5000	0.5250	20.0	118.0	6.44	37.0	2.020	30.0	1.6380		
50	31.5	1.8530	0.7150	26.0	149.0	8.13	48.5	2.650	41.0	2.2400		



Temple Building Tower, Chicago,
Holabird & Roche, Architects.

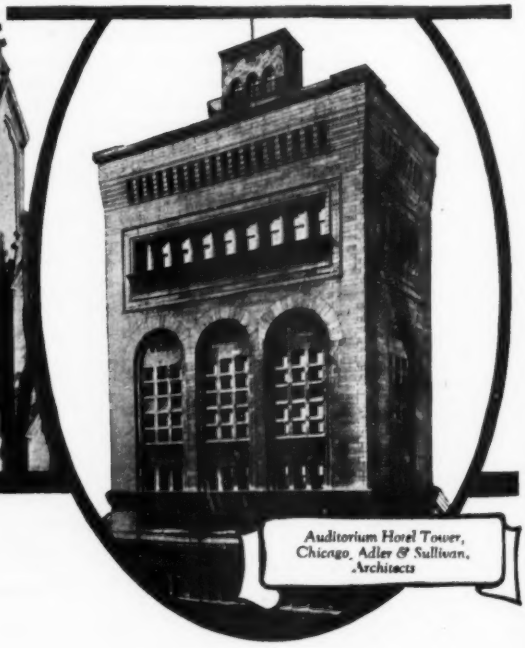
1884 — 1924

"The tower, in its origin, is a building for strength of defense, and faithfulness of watch," says Ruskin.

This original purpose has long since been outgrown; nevertheless, the tower has been preserved to us through the ages as one of the best loved traditions of architecture. Viewed across a sea of roofs and volleying smoke-stacks, a city's dominating towers are at once a challenge to the imagination and a stimulus to industry.

The towers here illustrated are built of Indiana Limestone, the one being that of the Auditorium Hotel, Chicago, erected forty years ago, the other that of the Temple Building, Chicago, recently completed. Note in the first, the expression of dignity and strength; in the other, grace and inspiration—expression made effective in both instances by the use of this natural stone.

Indiana Limestone is beautiful when simply laid, stone upon stone with no ornamentation, as in the Auditorium Tower, or when elaborately and precisely carved and fashioned into turrets and pinnacles as in the Temple Building Tower.



Auditorium Hotel Tower,
Chicago. Adler & Sullivan,
Architects

Our handsomely illustrated booklet on bank building will be sent free upon request. Address, Indiana Limestone Quarrymen's Association, Box 769, Bedford, Indiana.

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